ICORLTD

August 25, 2017

Commonwealth of Virginia Department of Environmental Quality Office of Remediation Programs 629 East Main Street Richmond, Virginia 23219

Attention: Mr. Vincent Maiden, Brownfields Program Coordinator

Subject: Final Site Characterization Report, Former Robinson Terminal North Property,

500 and 501 North Union Street, Alexandria, Virginia

Reference: VRP Site No. 00673

VDEQ PC No. 2016-3090 ICOR Project No. 13-CI.001

Dear Mr. Maiden:

Attached for your review is the *Final Site Characterization Report* (SCR) prepared by ICOR, Ltd. (ICOR) for the Former Robinson Terminal North property (herein referred to as the SITE) located at 500 and 501 North Union Street in Alexandria, Virginia. The SCR summarizes the recent and historical site characterization study (SCS) activities conducted by ICOR and others at the SITE to assess soil and groundwater quality and address Commonwealth of Virginia Department of Environmental Quality (VDEQ) mandates and requirements. To date, the VDEQ has assigned two Pollution Compliant Numbers (PC#s) to the SITE (PC#s 2006-3131 and 2016-3090). The PC#s are associated with suspect releases of petroleum from storage tanks. PC# 2006-3131 was closed by the VDEQ and PC# 2016-3090 remains open. The VDEQ mandated that a SCS be conducted to address the open PC#. The SITE was also entered into the VDEQ's Voluntary Remediation Program (VRP) in 2016 and was assigned VRP Number 00673. The SITE was entered into the VRP to address non-petroleum impacts, which are not typically addressed through the VDEQ's Petroleum Storage Tank Program (PSTP). The SCR was prepared to satisfy VRP and PSTP SCR requirements.

This Final version of the SCR addresses comments received by the VDEQ and City of Alexandria following their review of the Draft SCR prepared by ICOR, dated 10 April 2017.

If you have any questions concerning the Final SCR, please feel free to contact me at (703) 608-5969. Your expedited review of the Final SCR would be greatly appreciated.

Sincerely,

Michael A. Bruzzesi, CPG

Project Manager

VA CPG No. 2801 001428

$I_{COR_{\text{\tiny LTD}}}$

Mr. Maiden August 25, 2017 Page 2

Attachments

Final Site Characterization Report

cc: Mr. Russ Wheeler, Alexandria North Terminal, LLC

Mr. Jim Thornhill, McGuire Woods, LLP Mr. Alexander Wardle, VDEQ PSTP Mr. William Skrabak, City of Alexandria

ICORLTD

August 25, 2017

Commonwealth of Virginia Department of Environmental Quality Northern Regional Office: Petroleum Remediation 13901 Crown Court

Woodbridge, Virginia 22193

Attention: Mr. Alexander Wardle, Project Manager

Subject: Final Site Characterization Report, Former Robinson Terminal North Property,

500 and 501 North Union Street, Alexandria, Virginia

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Mr. Wardle August 25, 2017 Page 2

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Final Site Characterization Report

cc: Mr. Russ Wheeler, Alexandria North Terminal, LLC

Mr. Jim Thornhill, McGuire Woods, LLP

Mr. Vince Maiden, VDEQ VRP

Mr. William Skrabak, City of Alexandria

FINAL SITE CHARACTERIZATION REPORT

FORMER ROBINSON TERMINAL NORTH PROPERTY 500 AND 501 NORTH UNION STREET ALEXANDRIA, VIRGINIA

VDEQ VRP# 00673 VDEQ PC# 2016-3090

Prepared for:

Commonwealth of Virginia Department of Environmental Quality
Office of Remediation Programs
629 East Main Street
Richmond, Virginia 23219
(804) 698-4021

On Behalf of:

Alexandria North Terminal, LLC 2900 K Street, NW, Suite 401 Washington, DC 20007 (202) 944-4710

Prepared by:

ICOR, Ltd. PO Box 406 Middleburg, Virginia 20118 (703) 980-8515

ICOR Project No. 13-CI.01

AUGUST 25, 2017

SIGNATURE SHEET

This *Final Site Characterization Report* (SCR) for the Former Robinson Terminal North property located at 500 and 501 North Union Street in Alexandria, Virginia, was prepared by:

August 25, 2017

Michael A. Bruzzesi, CPG Date Project Manager/Senior Geologist VA CPG No. 2801 001428

The Final SCR was reviewed and approved for release by:

August 25, 2017

Ike L. Singh Program Manager

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Attachment 3. Boring Logs

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LIST OF ACRONYMS AND ABBREVIATIONS

ACP Atlantic Coastal Plain

ANT Alexandria North Terminal, LLC

ATGS Alexandria Town Gas Site AUL activity and use limitation

Bogle R.H. Bogle

BTEX benzene, toluene, ethylbenzene, and total xylenes

City of Alexandria

COPC constituent of potential concern

CSM Conceptual Site Model
CTI Columbia Technologies, Inc.

DO dissolved oxygen
EC electrical conductivity
ECD electron captor detector
ECS ECS Mid-Atlantic, LLC

EPA United States Environmental Protection Agency

FID flame-ionization detector
HC hydraulic conductivity
HDPE high-density polyethylene
Hpt Hydraulic Profiling Tool

HSA hollow stem auger ICOR ICOR, Ltd.

ICOR ICOR, Ltd.
ID inner diameter

MFG manufactured gas plant mg/kg milligram per kilogram mg/l milligram per liter

MIP Membrane Interface Probe system

MiHpt combined MIP and Hpt MTBE methyl tertbutyl ether

O&G oil and grease

ORP oxygen reduction potential PC# Pollution Compliant number polychlorinated biphenyl

PCE tetrachloroethene

PID photo-ionization detector PPL Priority Pollutant List

PSTP Petroleum Storage Tank Program

PVC polyvinyl chloride RA Risk Assessment

RAWP Remedial Action Work Plan

RCRA Resource Conservation and Recovery Act

RL analytical method reporting limit SCR Site Characterization Report SCS Site Characterization Study

SVOC semi-VOC

TAL Target Analyte List TCE trichloroethene

TCL Target Compound List

TCLP Toxic Characteristic Leaching Procedure TEC Total Environmental Concepts, Inc.

TOC top of casing

TPH total petroleum hydrocarbons

TPH-DRO diesel range TPH
TPH-GRO gasoline range TPH
ug/kg microgram per kilogram
ug/l microgram per liter
UST underground storage tank

VDEQ Commonwealth of Virginia Department of Environmental Quality

VDEQ-CWT VDEQ construction worker in a trench groundwater contacted and not

contacted

VDEQ-PDS VDEQ general permit discharge standards for petroleum contaminated

water

VDEQ-PSSS VDEQ petroleum saturated soil standards

VDEQ-T2SCR VDEQ Tier II screening concentrations for unrestricted (residential) land

use

VDEQ-T3CDSG VDEQ Tier III commercial deep soil gas screening level for inhalation of

indoor air

VDEQ-T3CSL VDEQ Tier III commercial groundwater screening level for restricted

groundwater use commercial land use inhalation of indoor air

VDEQ-T3CSSG VDEQ Tier III commercial sub-slab soil gas screening level for inhalation

of indoor air

VDEQ-T3CW VDEQ Tier III construction worker soil gas screening level for inhalation

of air in a trench

VDEQ-T3RDSG VDEQ Tier III residential deep soil gas screening level for inhalation of

indoor air

inhalation of indoor air

VDEQ-T3RSSG VDEQ Tier III residential sub-slab soil gas screening level for inhalation

of indoor air

VDEQ-T3SCC VDEQ Tier III screening concentration for restricted

(commercial/industrial) land use

VDEQ-WQSFC Water Quality Standard for fresh chronic

VDEQ-WQSQSW VDEQ Water Quality Standard for other surface waters

VI vapor intrusion

VOC volatile organic compound VRP Voluntary Remediation Program

WP Work Plan

1.0 INTRODUCTION

This report summarizes the Site Characterization Study (SCS) activities conducted by ICOR, Ltd. (ICOR) and others at the Former Robinson Terminal North property (herein referred to as the SITE) located at 500 and 501 North Union Street in Alexandria, Virginia. The most-recent activities were conducted on behalf of Alexandria North Terminal, LLC (ANT), a potential developer of the SITE, and were conducted to assess soil and groundwater quality and address Commonwealth of Virginia Department of Environmental Quality (VDEQ) mandates and requirements. Historical activities at the SITE and surrounding properties have resulted in impact to soil and groundwater underlying the SITE. To date, the VDEQ has assigned two Pollution Compliant numbers (PC#s) to the SITE (PC#s 2006-3131 and 2016-3090). The PC#s are associated with suspect releases of petroleum from storage tanks. PC# 2006-3131 has been closed by the VDEO and PC# 2016-3090 remains open. The VDEO mandated that a SCS be conducted to address the open PC#. The SITE was also entered into the VDEQ's Voluntary Remediation Program (VRP) in 2016 and was assigned VRP number 00673. The SITE was entered into the VRP to address non-petroleum impacts, which are not typically addressed through the VDEQ's Petroleum Storage Tank Program (PSTP). The Site Characterization Report (SCR) was prepared to satisfy PSTP and VRP SCR requirements.

This Final version of the SCR addresses comments received by the VDEQ and City of Alexandria (City) following their review of the Draft SCR prepared by ICOR, dated 10 April 2017.

The SITE is located in a mixed commercial and residential land use area and is currently improved with two vacant warehouses, small shed, railroad spur, paved parking lots, dock (pier), and landscaping. The proposed development of the SITE has not been finalized, but is anticipated to include construction of mixed residential, retail, and commercial use multi-story structures and will entail removal of most of the existing structures and features and mass grading and excavation. Based on the findings of past and recent environmental assessments, soil and groundwater beneath the SITE have been impacted by the past use of the SITE, which included bulk oil storage, fertilizer storage, coal storage, chemical mixing and manufacturing, and warehouse operations. Contributions from adjacent and nearby properties that were used in the past for fertilizer storage, city gas works, chemical manufacturing and mixing, and bulk oil storage are also suspected. Constituents of concern identified at elevated concentrations in soil, groundwater, and soil gas at the SITE include gasoline and diesel range total petroleum hydrocarbons (TPH-GRO and TPH-DRO, respectively), volatile organic compounds (VOCs), semi-VOCs (SVOCs), and metals.

The SCS activities conducted to date by ICOR and others include advancement of direct-sensing tooling to obtain real-time soil and groundwater data; advancement of test borings; installation of temporary and permanent groundwater monitoring wells; installation of soil gas sampling points; and collection of soil, groundwater, and soil gas samples for field screening and laboratory analysis. The SCS activities were conducted as detailed in ICOR's VDEQ-approved SCS Work Plan (WP). The SCS activities were conducted to evaluate the type, degree, and extent of soil and groundwater impacts and to evaluate general risks posed by the impacts to current and future site users. The findings of the SCS will be used to develop a remedial approach that allows for

successful development of the SITE and minimization of risks to human health and the environment. The history of the SITE and assessment activities and findings are summarized in the following sections.

2.0 SITE DESCRIPTION

The SITE is located at 500 and 501 North Union Street in Alexandria, Virginia, at the intersection of Oronoco Street and North Union Street. The SITE is comprised of two parcels, the 500 and 501 North Union Street parcels (herein referred to as the 500 and 501 Parcels, respectively), separated by North Union Street. The two parcels comprise approximately 3.2 acres of land. In past reports, the parcel addresses have also been listed as 1 and 101 Oronoco Street (corresponding to the 500 and 501 Parcels, respectively). A site location map is included as Figure 1. The SITE is situated in a mixed commercial and residential land use area. Adjacent property use is depicted on the aerial photograph included as Figure 2.

The SITE is currently improved with two 1-story, slab-on-grade brick, concrete, and steel warehouses (totaling approximately 91,800 square feet), a large concrete dock (pier), railroad spur, a small wood-frame shed (near the dock), gravel and asphalt and concrete-paved parking areas, and landscaping. The warehouses were constructed in 1966. The warehouse situated on the 500 Parcel is referred to as Warehouse #16. The warehouse situated on the 501 Parcel is referred to as Warehouse #10, #11, and #12. Three diesel underground storage tanks (USTs) were formerly buried on the northeastern portion of the 501 Parcel. The USTs were formerly used to store and dispense diesel fuel via two dispensers located on the east-central portion of the 501 Parcel (next to the small wood shed). The tanks were removed in 2016. A site plan depicting existing conditions is included as Figure 3.

Topography at SITE is relatively flat. The SITE is bound to the north by Pendleton Street and railroad tracks across which is Oronoco Bay Park, to the east and northeast by the Potomac River, to the south by Oronoco Street across which is Founders Park and a residential building, and to the west by Dalton Wharf Office Center and North Union Street.

3.0 PROPOSED DEVELOPMENT

The proposed development of the 500 and 501 Parcels has not been finalized, but is anticipated to include construction of mixed residential, retail, and commercial use multi-story structures. The new structures are anticipated to include one level of subsurface parking underlying the majority of each structure's footprint and will be constructed on poured-concrete foundations. Newly constructed buildings will overlie the majority of the parcels, with walkways, patios, and landscaping covering the remaining open spaces. Current plans for the parcels include raising the grade several feet across much of the parcels to allow for final elevations above the flood zone. Construction of the subsurface parking levels is anticipated to require excavation and removal of more than 8 feet of soil within the footprint of the subsurface levels.

Prior to development of the SITE, most of the existing structures and associated site improvements are expected to be razed and removed. Soil used to backfill and raise the grade of the parcels will be imported fill and/or soil generated during excavation at the SITE (assuming it is deemed acceptable by VDEQ standards for beneficial reuse). Most of the soil generated during excavation for the footers and subsurface parking levels is not expected to meet VDEQ reuse criteria and will likely require special handling and disposal or treatment; however, soil excavated from "clean" areas and/or found to meet VDEQ reuse requirements will be reused on or off site as backfill.

Based on groundwater measurement data obtained from the SITE, the subsurface parking levels and building footings will be constructed at depths situated near or several feet below the soil/groundwater interface (water table); thus, groundwater management during construction will likely be required. Groundwater management post-construction is not anticipated if the buildings are constructed on a water-tight foundation ("bath tub" type); however, if the buildings are designed to include a foundation dewatering system, long-term management of groundwater would be required. Groundwater management anticipated during construction includes dewatering and/or use of engineering controls (e.g., slurry wall, sheeting and shoring, mudmat, etc.). Groundwater generated during dewatering will likely require monitoring and potentially treatment before discharge to meet federal and state regulatory requirements.

4.0 BACKGROUND

The background information presented in this section and throughout this SCR was obtained from historical environmental and geotechnical reports. A list of the major reports is provided below.

- Evaluation of Groundwater Contamination at the R.H. Bogle Company Property, Alexandria, Virginia, prepared by Dames & Moore, dated July 29, 1976.
- **A Final Report of R.H. Bogle Chemical Company**, prepared by NUS Corporation Superfund Division, dated July 14, 1983.
- Tier 3 Dioxin Screening Investigation Report (Potomac Estuary Fish and Sediment Results), R.H. Bogle Co., Alexandria, Virginia, prepared by United States Environmental Protection Agency (EPA), Region III, dated April 19, 1985.
- Site Characterization Report, Robinson Terminal, 1 Oronoco Street, Alexandria, Virginia, prepared by Total Environmental Concepts, Inc. (TEC), dated January 25, 2007.
- Soil and Groundwater Testing, Robinson Terminal Warehouses, 500 and 501 N. Union Street, Alexandria, Virginia, prepared by ECS Mid-Atlantic, LLC (ECS), dated February 8, 2008.

- Preliminary Subsurface Exploration and Geotechnical Engineering Analysis, Robinson Terminal at Alexandria Waterfront, City of Alexandria, Virginia, prepared by ECS, dated February 14, 2008.
- **Phase I Environmental Site Assessment**, Robinson Terminal North, Alexandria, Virginia, prepared by WSP Environment & Energy, dated March 20, 2013.
- Subsurface Exploration and Geotechnical Engineering Analysis, Robinson Terminal North, Alexandria, Virginia, prepared by ECS, dated November 14, 2014.
- Limited Phase II Environmental Site Assessment, Robinson Terminal North, 1 and 101 Oronoco Street, Alexandria, Virginia, prepared by ICOR, dated December 15, 2014.
- Draft Site Review and Path Forward Report, Alexandria Town Gas-Oronoco Outfall Site, Alexandria, Virginia, prepared by Cardno, dated March 5, 2015 (2015 Cardno Report).
- UST Closure Report, Former Robinson Terminal North, 501 N. Union Street, Alexandria, Virginia, prepared by ICOR, dated April 18, 2016.

A discussion of the assessments and assessment findings related to historical SITE and surrounding area use and soil and groundwater quality are discussed below. A detailed discussion of the assessment activities conducted to date and soil, groundwater, and soil gas quality at the SITE is provided in Sections 5.0 and 7.0, respectively.

4.1 <u>Historical Site Use</u>

Past site uses of concern at the 500 Parcel include bulk oil storage (1891-1941), fertilizer storage (1907-1912), chemical mixing plant operations (1941-1966), and warehouse operations (1966-2016). Historic maps depicting past SITE and surrounding area property use are included as Attachment 1. The VDEQ issued PC# 2016-3090 to this Parcel in relation to the past bulk storage of oil at the Parcel (discussed in further detail in Section 4.3). Past site uses of concern at the 501 Parcel include coal storage (1885-1891), fertilizer and acid plant (1902-1941), sulfuric acid plant (1941-1968), and warehouse operations (1968-2016). The VDEQ issued PC# 2006-3131 to this Parcel in relation to a suspected release of petroleum from USTs located on the Parcel (discussed in further detail in Section 4.3). The aforementioned past site operations included the storage and manufacturing of raw petroleum products and chemicals and generation of petroleum and chemical wastes.

4.2 Adjacent Property Use

Historic adjacent property uses of concern include fertilizer storage on the property to the south (1896-1912), city gas works and chemical manufacturing on the property to the southwest (1851-1959), and bulk oil storage (1891-1941) and chemical mixing plant operations (1941-1966) on the property to the west. Historic maps depicting past SITE and surrounding area property use are included as Attachment 1.

4.3 Bulk Petroleum Storage and Petroleum USTs

In November 2005, a release of diesel fuel was suspected from one of the three former 8,000-gallon diesel USTs located near the northeast corner of the 501 Parcel. The tanks were in use at the time of the suspected release. A release was suspected because a small volume of diesel fuel (12 ounces) was recovered from a tankfield monitoring well. Following the suspected release, all three of the tanks were precision (integrity) tested and all three were found to be sound. The VDEQ assigned the suspect release PC# 2006-3131 and requested that a SCS be performed.

In April 2006, TEC advanced 13 test borings (designated TEC-B1 through TEC-B13) adjacent to the USTs and fuel dispensers. Observations noted during test boring advancement are summarized on Table 1. Permanent monitoring wells were installed within seven of the borings (designated TEC-MW1 through TEC-MW7). The boring and well locations are depicted on Figure 4 and well construction information is provided on Table 2. During advancement of the borings, TEC collected soil samples for field and laboratory analysis. The soil samples were analyzed for TPH-GRO and TPH-DRO. TEC collected groundwater measurements from the wells, checked the wells for the presence of free product on two occasions, and collected groundwater samples for laboratory analysis from the wells on one occasion. Groundwater measurement data is provided on Table 3. The groundwater samples were analyzed for TPH-GRO, TPH-DRO, benzene, toluene, ethylbenzene, and total xylenes (BTEX), methyl tertbutyl ether (MTBE), and naphthalene.

TEC noted evidence of minor impact to soil during advancement of test borings TEC-B6 and TEC-B9 and the impacts appeared to be limited and localized. TPH-GRO and TPH-DRO were detected in soil samples collected from these borings at relatively low concentrations. A summary of the detections in soil are presented on Table 4A. Free product was not observed in the monitoring wells. MTBE was the only constituent detected in the groundwater samples and was detected at relatively low concentrations. A summary of the detections in groundwater are presented on Table 4B. Groundwater was encountered at depths ranging from approximately 6 to 8 feet below grade and groundwater flow was inferred to the east (towards the Potomac River) under both high and low tide conditions. TEC did not believe the limited and localized nature of impacts and relatively low detections of petroleum constituents in soil and groundwater warranted further assessment or cleanup and recommended "case closure" of PC# 2006-3131. The VDEO concurred with TEC's recommendation and closed PC# 2006-3131.

The three 8,000-gallon USTs were taken out of service in 2015. In March 2016, the three USTs were closed via excavation and removal. Minimal impacts were noted during removal of the tanks. Soil samples were collected for laboratory analysis from the tank excavations and were analyzed for TPH-DRO. TPH-DRO was detected in a few of the samples at relatively low concentrations. In conjunction with the tank removal, all of the existing wells situated adjacent to the tanks (wells TEC-MW1 through TEC-MW7) were inspected for the presence of free product with none noted. Groundwater samples were also collected for laboratory analysis from wells TEC-MW2, TEC-MW3, TEC-MW4, and TEC-MW5. The groundwater samples were analyzed for TPH-DRO, BTEX, MTBE, and naphthalene. TPH-DRO and naphthalene were detected in a few of the samples at relatively low concentrations. A summary of the detections in groundwater are presented on Table 7B. Based on conditions noted during tank removal and

relatively low concentrations of constituents detected in soil and groundwater samples collected during tank closure, ICOR did not believe that further assessment and/or corrective actions were warranted.

In 2016, the VDEQ issued PC# 2016-3090 in relation to the past bulk storage of oil at the 500 Parcel. The vast majority of the bulk storage facility appears to have been located on the adjacent properties west of the 500 Parcel (see maps dated 1896-1921 in Attachment 1) with most of the storage in large aboveground tanks. Past and recent assessments conducted at the 500 Parcel suggest the bulk of soil and groundwater underlying this parcel has been impacted by petroleum. Further assessment of the impacts was performed as part of the SCS, as mandated by the VDEQ.

Historical documents suggest USTs may be buried beneath the southeastern portion of the 500 Parcel; however, no evidence of USTs (e.g., fillports, manways, vent pipes, etc.) were observed in the area. If USTs are unearthed during future development, they will be properly closed via excavation and removal with notification and approval by the VDEQ.

4.4 <u>Chemical Manufacturing and Storage</u>

The R.H. Bogle (Bogle) chemical manufacturing facility occupied land immediately west of the SITE, and potentially a portion of the 500 Parcel, between the 1940s and late 1950s (see maps dated 1941 and 1959 in Attachment 1). Bogle reportedly mixed and stored sulfuric acids, fertilizers, and herbicides as part of its operations. The herbicides were used to control brush along railroad right of ways. Investigations ordered by the EPA and VDEQ in the 1970s revealed elevated levels of arsenic in soil, groundwater, and sediment. Impacts to soil and groundwater were interpreted to extend onto the western portion of the 500 Parcel. The last reported use of herbicides on the Bogle property was in 1968. The property immediately west of Parcel 500 is referred to as the Dalton Warf property. Studies of this property concluded the following:

- The majority of arsenic impacts occur within 15 feet of the surface.
- Artesian pressure in a deeper aquifer precludes downward movement of contaminants.
- The only significant movement of arsenic is due to soil erosion and surface water runoff.
- Most arsenic remaining in soil has probably become insoluble due to chemical reactions with soil constituents.
- The risks associated with impacts could be alleviated by developing the property using strict guidelines for architectural design and disturbance of soil during construction.

In 1978 the Dalton Warf property was sold and subsequently developed into commercial office townhouses. Prior to construction, the most heavily-impacted areas were "capped" with 18-inches of iron-rich clay to prevent arsenic migration. Restrictions placed on future site development and incorporated into property deeds excluded basements and swimming pools, imposed strict dust control during construction, and required placement of polyethylene around buried utility lines. According to the 2015 Cardno Report:

The site is [sic] remains subject to a Consent Agreement with the U.S. EPA that states "no construction or ground disturbance shall be undertaken on the property prior to receipt by the Company (Development Resources, Inc.) or its successor interest of a written authorization from the City Manager... and... shall be conducted in accordance with any lawful procedures established by the City Manager...". The Consent Agreement also regulates the disposal of waste materials resulting from construction or ground disturbance on the property.

The EPA investigated the former Bogle property in 1985 for the presence of 2,3,7,8-TCDD (a dioxin). This type of dioxin was reportedly generated and used at the plant. None of the 38 soil samples collected by EPA (including two soil samples on the 500 Parcel) contained 2,3,7,8-TCDD above detectable levels. The EPA concluded that "There is no indication that there is a threat of human exposure to dioxin at those locations at levels above the level of concern for residential areas." Another dioxin concern noted was a potential release of dioxin from a railroad car containing dioxin-impacted water parked on the railroad spur of the SITE; however, impacts associated with this incident appear to have been investigated by the EPA and addressed with no further assessment or cleanup required. A 1985 newspaper report discussing sampling for dioxins at Bogle, of which the 500 Parcel was a part of at the time, reported only two detections which were in river sediments and were described as being "well below what the agency regards as hazardous."

Numerous assessment and cleanup activities have been conducted by the City and continue to be conducted in relation to the former coal gasification facility (referred to as the Alexandria Town Gas Site [ATGS] and manufactured gas plant [MFG]). The ATGS was located near the corner of North Lee and Oronoco Streets (southwest of the SITE) and manufactured gas for heating, cooking, and lighting from 1851 through 1946 (see maps dated 1885-1941 in Attachment 1). Section 1.3 entitled "Site History and Background" in 2015 Cardno Report provides the following history of the ATGS:

Soil and groundwater beneath the site was impacted by coal tar residues originating from the former MGP which was owned and operated by the City from 1851 until 1930. The plant was then sold to a private company that later merged with Washington Gas. The plant continued to operate until it closed in 1947. Over the ensuing years, the site was gradually redeveloped into commercial warehouses and eventually the Lee Street Square office townhouses that remain today. The redevelopment of the surrounding area from its former industrial base to the current mixed commercial and residential community also occurred during the 1950s through the 1970s.

As a part of its redevelopment of the Old Town area, the City installed a storm sewer pipeline beneath Oronoco Street in 1977. The 72-inch corrugated metal storm water pipe runs beneath the street and past the former MGP site on its way to the Potomac River where it discharges via the Oronoco outfall, located near the northeast corner of Cityowned Founders Park. However, not long after the pipe was installed, coal tar residues were seen seeping from the river bottom off the outfall. The City's investigations found that the installation of the storm water pipeline had created a pathway linking the former MGP site with the river. In spite of the City's numerous efforts to stem the flow, coal tar

continued to migrate from the MGP site to the river via the pipeline under-bedding and through holes and cracks in the pipe that carried coal tar-laden groundwater into the storm sewer and on to the river. Dissolved phase and dense, non-aqueous phase liquids (DNAPL) emerged from seeps on the river bottom off Oronoco outfall. Over the next 35 years, the ongoing discharges impacted sediment off Oronoco outfall.

In 2000 the City entered the site in the VRP and installed a floating oil containment boom around the outfall to contain residues emerging from the seeps and to prevent their spread to other portions of the river. The installation of a cure in place liner inside the Oronoco pipeline between North Lee and North Union Streets in 2007 further slowed the migration of residues from the MGP. In 2013, the City installed a groundwater treatment system beneath Oronoco Street between North Union Street and the river to intercept and treat impacted groundwater as it migrates from the MGP site to the outfall. The system, which is comprised of a free product recovery vault, nine-point bio-sparge zone and a permeable reactive barrier, eliminates the discharges. Although an area of impacted sediments remains off the outfall, the upcoming sediment dredge and cap project will eliminate exposure pathways for human and ecological receptor populations.

Since 2003, the City has also actively recovered free product (coal tar) from the source area remaining beneath the northern edge of the former MGP site, adjacent to Oronoco Street. Although the City's subsurface investigation delineated an area of free product beneath the curb and sidewalk along the south edge of the street, most recovery largely comes from one of five purpose-designed wells installed in the City right of way. Additional product has been recovered from two monitoring wells installed in the 2004 Site Characterization.

The 2015 Cardno Report also discussed potential remedial approaches available for addressing the impacts associated with the former ATGS in Section 5.0 including:

Because of coal tar's characteristics (non-volatile, viscous highly adsorptive, and environmentally persistent), reducing concentrations in site media by meaningful levels beneath the entire impacted area is not feasible over the short term. Although the removal or even in-situ treatment of impacted materials is technically feasible, the constraints of maintaining the economic viability of impacted properties and avoiding community disruption would preclude undertaking this approach at a scale capable of reducing risks to acceptable levels. Intrusive remedial actions such as excavation and removal over a large enough area would require disrupting the current use of the properties and supporting infrastructure and incur economic losses to landowners, tenants and residents. Even many in-situ approaches to soil and groundwater treatment such as chemical oxidation or thermal treatment would likely create conditions requiring the temporary evacuation of overlying structures.

Instead, an acceptable level of risk reduction would be more effectively achieved by deploying a combination of institutional and engineering controls designed to mitigate risks without source removal. Because the City government has administrative authority it is in a position to impose land use controls needed to achieve risk reduction. Potential

controls include activity and use limitations (AULs) including deed restrictions, zoning, and permitting, as well as engineering controls.

Additional details may be found in the Cardno Report.

ICOR understands that further assessment is planned by the City to delineate impacts in soil, groundwater, and sediment and further cleanup and/or controls are planned to address these affected media. In the short term, dredging and removal of impacted sediments near the Oronoco Street outfall is planned.

Groundwater data collected during the assessment of the Bogle chemical manufacturing facility and ATGS suggests groundwater flow was historically and continues to be to the east and northeast, towards the Potomac River (and the SITE). According to the Cardno Report, the ATGS treatment system installed in 2013 is believed to intercept most of the remnant free product and impacted groundwater emanating from the ATGS. Prior to installation of the treatment system, migration of free product and impacted groundwater was not limited or controlled. Contaminants associated with the ATGS and identified in the 2015 Cardno Report include VOCs, SVOCs and PAHs.

4.5 Constituents of Potential Concern

Based on the findings of past assessments and past SITE and surrounding area use, COPCs include TPH-GRO, TPH-DRO, VOCs, SVOCs, pesticides, herbicides, polychlorinated biphenyls (PCBs), and metals. Although not considered a concern based on the findings of past environmental assessments (led by the EPA), further assessment of dioxin in soil was requested by the City (a stakeholder on this project). The dioxin sampling was conducted as detailed in ICOR's City-approved Addendum to the SCS WP (WP Addendum).

4.6 Regulatory Status

To date, the VDEQ has assigned two PC#s to the SITE (PC#s 2006-3131 and 2016-3090). As previously discussed, the PC#s are associated with suspect releases of petroleum from storage tanks. PC# 2006-3131 has been closed by the VDEQ and PC# 2016-3090 remains open. The VDEQ mandated that a SCS be conducted to address the open PC#. The SITE was also entered into the VRP in 2016 and was assigned VRP number 00673. The SITE was entered into the VRP to address non-petroleum impacts, not typically addressed through the PSTP. The SCS required to address VRP and PSTP mandates and requirements and additional assessment activities requested to address City concerns were conducted simultaneously, with the findings presented in this SCR.

5.0 SOIL, GROUNDWATER, AND SOIL GAS ASSESSMENT

This section details the soil, groundwater, and soil gas assessment activities conducted to date at the SITE by ICOR and others. The assessment activities conducted to date include advancement of direct-sensing tooling to obtain real-time soil and groundwater data; advancement of test borings; installation of temporary and permanent groundwater monitoring wells; installation of soil gas sampling points; and collection of soil, groundwater, and soil gas samples for field screening and laboratory analysis. The most recent assessment activities were conducted as proposed in the SCS WP and SCS WP Addendum and were conducted under the direct supervision of a Commonwealth of Virginia Certified Professional Geologist. Photodocumentation of the recent assessment activities conducted by ICOR (between 2013 and 2016) is included as Attachment 2.

5.1 Delineation Using Real-Time Tooling

Numerous test borings have been advanced at the SITE over the years to assess soil and groundwater quality. To further delineate the horizontal and vertical extent of petroleum and VOC impacts to soil and groundwater and to better "target" soil and groundwater zones for collection of additional laboratory samples, direct-sensing tooling was advanced at 22 locations at the SITE (designated MiHpt-1 through MiHpt-22). The direct-sensing testing locations are depicted on Figure 4.

The tooling was advanced using a direct-push sampling rig and was used to collect soil and groundwater data for analysis in real-time. The tooling was advanced through holes cored in the concrete building slabs and parking lots. The tooling included a Membrane Interface Probe (MIP) and Hydraulic Profiling Tool (Hpt) system (combined referred to as MiHpt). The MIP was equipped with three different detectors. Soil and groundwater quality data collected with the MIPs tooling and analyzed in real-time included photo-ionization detector (PID), flame-ionization detector (FID), and electron captor detector (ECD) readings. The PID and FID are used to detect petroleum and VOC constituents and the ECD is used to detect chlorinated solvents. Higher PID, FID, and ECD readings generally correlate with more elevated constituent concentrations.

Potential constituent migration pathways collected with the Hpt tooling and analyzed in real-time included electrical conductivity (EC) and hydraulic conductivity (HC). EC data is used to determine soil type, with lower EC values associated with larger grain soils (sands and gravels) and higher EC values characteristic of finer grained soils (fine sand, silt, and clay). HC data is used to determine flow rate through soil and permeability of soil. The Hpt was used to evaluate potential constituent migration pathways by determining lithology and permeability.

The tooling and associated analytical software was provided by Columbia Technologies, Inc. (CTI). The data was reviewed in the field by an experienced CTI geochemist and downloaded as collected into a project database for review by the project team. Several of the borings were advanced adjacent to previous boring locations (ICOR-SB7, ICOR-SB8, and ICOR-SB10) to calibrate the equipment to available lithology and analytical data.

The tooling was advanced to refusal or minimum depth of 25 feet below grade. At locations where impacts of note were observed, the tooling was advanced deeper to fully delineate the vertical extent of impacts. As requested by the VDEQ, attempts were made to advance several of the MiHpt borings to a depth corresponding to the top of the marine clay (present at a depth of 40 feet below grade or deeper); however, a depth deep enough to encounter the marine clay was

only achieved at testing locations MiHpt-8, MiHpt-9, and MiHpt-11. Refusal of the tooling was experienced at the remaining five locations where this was attempted (MiHpt-5, MiHpt-13, MiHpt-15, MiHpt-16, and MiHpt-22). Test boring depths and observations noted during test boring advancement are summarized on Table 1.

A Laser Induced Fluorescence tool was also readily available during the real-time investigation to delineate petroleum free product if it was suspected during advancement of the MiHpt borings; however, no indications of free product was noted.

All reusable direct-push and downhole equipment that came into direct-contact with soil was constructed of steel and was properly decontaminated between boring locations. Wastes generated during advancement and decontamination of the tooling was contained in 55-gallon drums pending proper disposal.

At the conclusion of advancement, each borehole was properly abandoned by tremmie grouting from the bottom of boring to surface. The vertical elevation and horizontal location of each boring was surveyed by a Commonwealth of Virginia-licensed surveyor.

5.2 Soil Sampling

To date, more than 60 test borings have been advanced at the SITE for environmental assessment and/or geotechnical purposes. The boring locations are depicted on Figure 4. Soil quality was assessed through the collection of samples for visual inspection, field screening, and laboratory analysis and targeted soil in areas where impacts would most-likely be expected based on past and current SITE use and past adjacent and nearby property use. More than 100 soil samples were collected for laboratory analysis during advancement of the borings. Some of the most-recent samples collected for laboratory analysis targeted soil zones deemed impacted and worthy of further assessment based on the findings of the real-time delineation. A comprehensive list of the test borings, general test boring information, observations made during advancement, and types of samples collected is provided on Table 1.

The vast majority of the test borings were advanced using a direct-push sampling rig. The deeper borings advanced during the geotechnical investigations performed by ECS were advanced using a mobile drill rig fitted with hollow stem augers (HSAs). Test borings advanced by ICOR between 2013 and 2016 were advanced using a direct-push sampling rig and were advanced until the soil/groundwater interface (groundwater table) was encountered or refusal of the sampling equipment was experienced. The groundwater table was encountered at all test boring locations at depths ranging from approximately 5 to 10 feet below grade.

Soil samples were collected continuously during advancement of the TEC and ICOR test borings using acetate-lined barrel samplers. Soil samples were collected at 5 foot intervals during advancement of the ECS test borings. The soil samples were collected for lithologic characterization, visual inspection, field screening, and potential laboratory analysis. In general, bag samples were collected at 2 foot intervals from the soil cores for screening in the field with a PID. Field screening was performed to check for the presence of volatile organic vapors. Observations and field screening readings were recorded on boring logs. Copies of the boring

logs are included in Attachment 1. Observations of note such as odors and field screening readings are also summarized on Table 1.

Soil samples were collected for laboratory analysis from the surface (upper 1.5 feet of soil underlying bare site surface, concrete floor slabs, or pavement) and subsurface. The samples were collected from soil intervals exhibiting the highest degree of impact and depths suspected of being impacted based on the findings of the real-time assessment. The samples were also collected to provide good spatial coverage of the SITE and to delineate the vertical extent of impacts. All of ICOR's samples were grab samples. Each sample represented an approximately 1 foot interval of soil. The TEC samples are also believed to have been grab samples. Some of ECS's samples and samples collected by ICOR during ECS's most-recent geotechnical investigation are considered composite samples based on the large sample interval.

The samples collected by TEC and ECS were analyzed for some or all of the following: TPH-GRO, TPH-DRO, VOCs, pesticides, herbicides, PCBs, and metals. Samples collected by ICOR were analyzed for some or all of the following: TPH-GRO and TPH-DRO using EPA Method 8015C, Target Compound List (TCL) VOCs using EPA Method 8260B (with the most-recent samples collected in 2016 using TerraCore® samplers), TCL SVOCs using EPA Method 8270C, PCBs using EPA Method 8082, pesticides using EPA Method 8081B, herbicides using EPA Method 8151A, 2,3,7,8-TCDD using EPA Method 8290A, and Resource Conservation and Recovery Act (RCRA) or Priority Pollutant List (PPL) metals using EPA Method 6020A. Based on the type and concentration of metals detected, some of the samples were additionally analyzed for Toxic Characteristic Leaching Procedure (TCLP) RCRA metals using EPA Method 301A/6020A and chromium VI using EPA Method 7196A. A list of sampling depths and type of analysis performed on each sample are summarized on Table 1.

All direct-push equipment that came into direct-contact with soil was constructed of steel and was properly decontaminated between boring locations. Decontamination water generated during decontamination of the tooling was contained in 55-gallon drums and will be properly disposed.

Soil generated during advancement of the test borings prior to 2016 was used to backfill their respective borings at the conclusion of sampling. Soil generated during advancement of the 2016 borings, was placed in 55-gallon drums pending proper disposal. The 2016 boreholes were properly abandoned by tremmie grouting from the bottom of boring to surface. The vertical elevation and horizontal location of each boring was surveyed by a Commonwealth of Virginia-licensed surveyor.

5.3 **Groundwater Sampling**

Between April 2006 and September 2016, 8 temporary groundwater monitoring wells (installed at test boring locations ICOR-SB1, ICOR-SB5 through ICOR-SB9, and ICOR-SB12) and 17 permanent groundwater monitoring wells (designated TEC-MW1 through TEC-MW7, ECS-MW2, ECS-MW4, MiHpt-5, MiHpt-7, MiHpt-8, MiHpt-14, MiHpt-15, MiHpt-20, MiHpt-21, and MiHpt-22) were installed at the SITE. In addition, "deep" groundwater samples were collected from five locations (MiHpt-8, MiHpt-10, MiHpt-14, MiHpt-21, and MiHpt-22) using a

Screen Point sampler in 2016. The well locations were selected to assess areas where impacts would most-likely be expected based on past and current SITE use and past adjacent and nearby property use, provide good spatial coverage of the SITE, and target locations and zones deemed impacted and worthy of further assessment based on the findings of the real-time delineation. The well and deep groundwater sampling locations are depicted on Figure 4. Well construction information for the wells and Screen Points is provided on Table 2. Boring logs for the wells and Screen Points are included in Attachment 2.

Temporary Monitoring Well Construction and Sampling

The temporary wells installed in 2013 by ICOR were installed in boreholes advanced with a direct-push sampling rig. The wells were constructed of new, dedicated, and disposable 1-inch inner diameter (ID) polyvinyl chloride (PVC) well screens and casings. A 10-foot length of screen was used during the construction of the temporary wells. The well screen was positioned to straddle the soil/groundwater interface and was surrounded with sand filter pack.

Immediately after the wells were installed, they were developed and sampled. Prior to development and sampling, the groundwater level in each temporary well was allowed to stabilize and the depth to petroleum free product and groundwater was measured to the nearest 0.01 foot of the well's top of casing (TOC) using an electronic oil/water interface probe. The well measurements recorded are summarized on Table 3. Development and sampling was performed using a peristaltic pump fitted with new, dedicated, and disposable high-density polyethylene (HDPE) sample tubing. The sample tubing inlet was placed approximately 2 feet from the base of each well screen. Development consisted of purging a well until the purge water appeared relatively clear and free of suspended solids (based on a visual inspection). When the purge water appeared clear, a groundwater sample was collected. The groundwater samples were grab samples transferred directly from the discharge tubing to the sample containers. The samples were collected at a low flow rate (less than 250 milliliters per minute) to minimize agitation and aeration.

The groundwater samples were submitted to a qualified laboratory for analysis of some or all of the following: TPH-DRO and TPH-GRO using EPA Method 8015, TCL VOCs using EPA Method 8260B, TCL SVOCs using EPA Method 8270C, and total and dissolved PPL metals using EPA Method 6020A. Samples collected for dissolved metals analysis were filtered in the field. The type of analysis performed on each sample is summarized on Table 1.

All purge water generated during sampling was stored in a 55-gallon drum and was properly disposed. The temporary wells were removed shortly after groundwater samples were collected and the associated boreholes were backfilled to grade with their respective cuttings and bentonite.

Permanent Monitoring Well Construction and Sampling

The permanent wells installed by TEC in 2006 and ICOR in 2016 were installed in boreholes advanced with a direct-push sampling rig. The ECS wells were installed using a mobile drill rig fitted with HSAs. The TEC and ICOR wells were constructed of new, 1-inch ID PVC well screen and casing. A 10-foot length of well screen was used during the construction of the ICOR wells. The well screen was positioned to straddle the soil/groundwater interface and was

surrounded with sand filter pack. The filter pack was overlain with 2 feet of hydrated bentonite chips and the remaining void was backfilled with grout. The length of screen used and well construction details for the TEC and ECS wells is unknown. The TEC and ECS wells were completed with well caps and flush-mount manhole covers anchored in concrete pads. The ICOR wells were completed with well caps.

All wells installed by ICOR were properly developed before sampling. Development consisted of purging a well until the purge water appeared relatively clear and free of suspended solids (based on a visual inspection). Groundwater samples were collected for laboratory analysis from each permanent well on at least two occasions with the exception of some of the TEC wells. Two of the TEC wells, TEC-MW6 and TEC-MW-7, could not be located and may have been destroyed or covered with gravel during parking lot improvements.

Sampling conducted by ICOR was performed using a peristaltic pump fitted with new, dedicated, and disposable HDPE tubing. Before sampling each well, the depth to petroleum free product and groundwater was measured to the nearest 0.01 foot from the well's TOC using an oil/water interface probe. The well measurements recorded before sampling the wells are summarized on Table 2. The sample tubing inlet was placed at a depth corresponding to the center of each monitoring well's submerged screen interval. The samples were collected at a low flow rate (less than 250 milliliters per minute) to minimize agitation and aeration. Sampling was conducted in accordance with low-flow purging and sampling protocols recommended by the EPA.

The groundwater samples were collected after field parameters stabilized during purging. The following field parameters were monitored during purging: temperature, pH, specific conductivity, dissolved oxygen (DO), oxygen reduction potential (ORP), and turbidity. All of these parameters were measured using a multi-meter and low volume flow cell. Purging was considered complete when temperature, pH, specific conductivity, DO, ORP, and turbidity readings (an acceptable EPA, subset of parameters) stabilized for a minimum of three consecutive readings. It should be noted that several of the wells went dry during sampling. Samples were collected from wells that went dry after they were allowed to recharge.

The samples were transferred to appropriate sample containers directly from the discharge tubing and were grab samples. The shallow groundwater samples collected by TEC and ECS were analyzed for some or all of the following: TPH-GRO, TPH-DRO, BTEX, MTBE, naphthalene, VOCs, SVOCs, and metals. The shallow groundwater samples collected by ICOR were analyzed for some or all of the following: TPH-GRO and TPH-DRO using EPA Method 8015C, TCL VOCs using EPA Method 8260B, TCL SVOCs using EPA Method 8270C, PCBs using EPA Method 8082, pesticides using EPA Method 8081B, herbicides using EPA Method 8151A, and PPL metals using EPA Method 6020A. A type of analysis performed on each sample is provided on Table 1.

The water level meter and multi-meter were properly decontaminated between well locations. All purge water generated during development and sampling was stored in 55-gallon drums pending proper disposal.

The relative elevations of the permanent wells TOCs were surveyed by a Commonwealth of Virginia-licensed surveyor. The elevations are presented on Tables 1 and 2.

Deep Groundwater (Screen Point) Sampling

Deep groundwater samples were collected for laboratory analysis using a Screen Point sampler advanced to the target depth using a direct-push sampling rig. The Screen Point sampler is an approximately 3.5-foot stainless steel screen that is deployed (exposed) when the target depth is achieved. The Screen Points are reusable and were properly decontaminated between sampling locations.

Immediately after the Screen Points were installed, they were developed and sampled. Development and sampling was performed using a peristaltic pump fitted with new, dedicated, and disposable HDPE sample tubing. The sample tubing inlet was placed at the approximate center of the Screen Point. Development consisted of purging a Screen Point until the purge water appeared relatively clear and free of suspended solids (based on a visual inspection) or Screen Point went dry. When the purge water appeared clear or Screen Point went dry, a groundwater sample was collected. The groundwater samples were grab samples transferred directly from the discharge tubing to the sample containers. The samples were collected at a low flow rate (less than 100 milliliters per minute) to minimize agitation and aeration.

The deep groundwater samples were analyzed for analysis of some or all of the following: TPH-DRO and TPH-GRO using EPA Method 8015, TCL VOCs using EPA Method 8260B, TCL SVOCs using EPA Method 8270C, and TPH and oil and grease (O&G) using EPA Method 1664A. TPH and O&G analysis by EPA Method 1664A was performed to determine if the TPH detected may be attributable to naturally occurring plant and animal fats in soil and groundwater. A list of sampling depths and type of analysis for each deep sample are provided on Table 1.

All purge water generated during sampling was stored in a 55-gallon drum pending proper disposal. The Screen Points were removed shortly after groundwater samples were collected and the associated boreholes were properly abandoned by tremmie grouting from the bottom of boring to surface.

5.4 Soil Gas Sampling

To assess soil gas quality, ICOR collected four sub-slab soil gas samples from the 500 Parcel (designated SSG-1 through SSG-4) and four deep soil gas samples from the 501 Parcel (designated DSG-1 through DSG-4). The soil gas sampling locations are depicted on Figure 4. The samples were collected in December 2016. The soil gas samples were biased to locations where the highest degree of VOC impact was noted during the real-time tooling assessment and follow-up soil and groundwater sampling. Sub-slab sampling was selected for the 500 Parcel because the development of this parcel at the time of sampling was anticipated to be slab-ongrade construction. Current development plans for this parcel anticipate one level of subsurface parking. The type of soil gas sampling performed is not expected to have much bearing on the findings since the water table at this parcel and SITE in general is relatively shallow (ranges from approximately 5 to 10 feet below grade). Sampling protocols were consistent with those recommended in VRP guidance documents.

Sub-Slab Soil Gas Sampling

The sub-slab soil gas samples were collected directly under the existing warehouse building concrete floor slab. Each sample was collected from a Vapor Pin® installed within a 3/4-inch diameter corehole drilled through the concrete floor slab. A Vapor Pin® is a reusable stainless steel vapor point surrounded by new, dedicated, and disposable silicone tubing that is driven into a corehole. The silicone tubing provides an air-tight seal with the concrete. Each point was purged after installation and soil gas samples were collected from the points after an equilibration period of more than 24 hours. The soil gas samples were collected in Summa canisters over an 8-hour time period. The canisters were provided by a VDEQ-certified laboratory. The canisters were connected to the sampling points by new, dedicated, and disposable HDPE tubing. The sub-slab soil gas samples were analyzed for VOCs using EPA Method TO-15.

At the conclusion of sampling, each Vapor Pin® was removed and the resulting coreholes were restored with concrete sealer.

Deep Soil Gas Sampling

The deep soil gas samples were collected at depths ranging from 2 to 6.5 feet below grade (at depths corresponding to approximately 1 foot above the soil/groundwater interface or "wet" soil zones). The samples were collected from vapor points installed using a direct-push sampling rig. The vapor points consisted of new 0.5-foot stainless steel GeoProbe® soil gas sampling probes attached to new HDPE tubing lowered through borehole or rods to approximately 6-inches from the bottom of the borehole. The probe was surrounded by approximately 1.5 feet of sand filter pack (which included approximately 6-inches of filter pack above and below the probe). The remaining open borehole was backfilled with hydrated granular bentonite (approximately 1 foot) and bentonite grout to grade. The tubing inlet was fitted with a new cap.

Each point was purged after installation and soil gas samples were collected from the points after an equilibration period of more than 24 hours. The soil gas samples were collected in Summa canisters over an 8-hour time period. The canisters were provided by a VDEQ-certified laboratory. The canisters were connected to directly to the sample point tubing. The deep soil gas samples were analyzed for VOCs using EPA Method TO15.

At the conclusion of deep soil gas sampling, the tubing was fitted with a cap and left in place for future sampling should it be required.

6.0 SITE GEOLOGY AND HYDROGEOLOGY

Topography at SITE is relatively flat and the elevation of the SITE is approximately 9 feet above mean sea level. The closest surface water body to the SITE is the Potomac River which bounds the SITE to the east and northeast. SITE and area topography and the location of the above-referenced surface water body are depicted on Figure 1.

The SITE is located within the Atlantic Coastal Plain (ACP) physiographic province. The ACP physiographic province is characterized by a series of south-easterly dipping layers of relatively

consolidated sandy clay deposits, with lesser amounts of gravel. The ACP sediments are estimated to be approximately 250 feet thick and are underlain by the eastward continuation of crystalline bedrock of the Piedmont physiographic province. Portions of the SITE are underlain by Quaternary Age river terrace deposits, Cretaceous Age deposits of the Potomac Group, and fill. The Potomac Group deposits consist of interbedded layers of sand, silt, clay, and gravel.

Based on observations made during the historical and recent assessments, the upper 4 to 15 feet of the SITE is underlain by fill. The fill varied in composition, with sand, silt, clay, brick, asphalt, organics, wood, and gravel noted. Beneath the fill materials, alluvial soil characterized by interbedded and alternating layers of sand, silty sand, and sandy gravel with varying amounts of clay were encountered to a depth ranging from 45 to 55 feet below grade. Beneath the alluvial soil, marine clay of the Potomac Group was encountered and extended to the maximum explored depth of 80 feet below grade. The encountered soil was consistent with regional geology. Geologic information is summarized on boring logs included as Attachment 3. Geologic cross-sections generated from the boring logs are included as Figures 5-8.

Based on groundwater measurements obtained from monitoring wells and findings of historical studies, the depth to groundwater at the SITE ranges from approximately 5 to 10.5 feet below grade and groundwater flow is to the east-northeast towards the Potomac River. The Potomac River is tidally influenced; however, data collected during a past study did not suggest that tidal change has a significant effect of groundwater flow. Historical groundwater measurements obtained from the site wells are summarized on Table 3. Groundwater contours generated from the two most-recent groundwater sampling events (2016 and 2017) are depicted on Figure 14. It should be noted that a semi-confined, lower water-bearing zone was encountered beneath the 500 Parcel.

Groundwater is not currently used and is not proposed for use in the future as a potable drinking water or irrigation water supply at the SITE. Based on ICOR's past experience, groundwater in the City is not used or approved for use as a potable or irrigation water supply. Potable drinking water is provided to the SITE and surrounding area by the City. The City's potable water sources are surface water reservoirs.

7.0 SOIL, GROUNDWATER, AND SOIL GAS QUALITY

Soil, groundwater, and soil gas quality were assessed at the SITE through the collection of samples for visual inspection, field screening, and laboratory analysis and comparison of the analytical results to applicable VDEQ screening levels. The assessment activities conducted to date include advancement of direct-sensing tooling at 22 locations to obtain real-time soil and groundwater data, advancement of more than 60 test borings, installation of 8 temporary and 17 permanent groundwater monitoring wells, and installation of 4 sub-slab and 4 deep soil gas sampling points. The test boring, well, and soil gas sampling point locations are depicted on Figure 4. More than 100 soil, 48 groundwater, and 8 soil gas samples have been collected for laboratory analysis.

7.1 Real-Time Delineation

Direct-sensing tooling was advanced at 22 locations at the SITE (designated MiHpt-1 through MiHpt-22) to delineate the horizontal and vertical extent of petroleum and VOC impacts to soil and groundwater and to better "target" soil and groundwater zones for collection of additional laboratory samples. The tooling was advanced to depths ranging from 13 to 50 feet below grade, with refusal experienced at most locations.

The MiHpt was successfully used to identify soil and groundwater zones of concern, horizontally and vertically delineate soil and groundwater impacts, and identify lithology type and water-bearing zones. The findings of the real-time assessment are summarized in a report prepared by CTI included as Attachment 4. The MIPs data obtained during advancement of the tooling is provided on Table 1.

Profiles generated from the collected data are presented in the CTI report included as Attachment 4. Notable findings of the real-time assessment are summarized below.

- A clay unit, believed to be the marine clay of the Potomac Group, was encountered at depths ranging approximately 37 to 44 feet below grade.
- Good water-bearing zones were generally noted in the upper 25 feet of the site surface.
- Elevated PID readings were noted at testing locations MiHpt-7 (from 6.5-9 feet below grade), MiHpt-21 (from 7-11 feet below grade), and MiHpt-22 (from 5-5.5 and 8-30 feet below grade).
- Elevated FID readings suggesting the potential presence of petroleum-related VOCs were noted at testing locations MiHpt-6 (from 14.5-14.8 feet below grade), MiHpt-7 (from 6.5-9 and 10-11 feet below grade), MiHpt-8 (from 4-5, 7-7.25, 14-17, and 22-42 feet below grade), MiHpt-9 (from 20.5-35 feet below grade), Elevated PID and FID readings were noted at testing locations MiHpt-6 (from 14.5-14.8 feet below grade), MiHpt-7 (from 6.5-11 feet below grade), MiHpt-8 (from 4-7.25, 14-17, and 22-42 feet below grade), MiHpt-10 (from 10.5-11.5 and 23-26 feet below grade), MiHpt-13 (from 3-14 feet below grade), MiHpt-14 (from 10-16 feet below grade), MiHpt-18 (from 23-23.5 feet below grade), MiHpt-21 (from 7-11 feet below grade), and MiHpt-22 (from 5-5.5 and 8-30 feet below grade).
- Elevated ECD readings suggesting the potential presence of chlorinated solvent-type VOCs were noted at testing locations MiHpt-13 (from 3-22 feet below grade), MiHpt-14 (from 4-9 feet below grade), MiHpt-15 (from 13-25 feet below grade), and MiHpt-21 (from 7-10 feet below grade).

The data collected during the real-time assessment was used to select test boring and well locations, sample depths, and types of analysis.

7.2 **Soil Quality**

Based on field observations, the upper 4 to 15 feet of the SITE is underlain by fill comprised of some or all of the following: sand, silt, clay, brick, asphalt, organics, wood, and gravel. Beneath the fill materials, alluvial soil characterized by interbedded and alternating layers of sand, silty

sand, and sandy gravel with varying amounts of clay were encountered to a depth ranging from 45 to 55 feet below grade. Beneath the alluvial soil, marine clay of the Potomac Group was encountered and extended to the maximum explored depth of 80 feet below grade. Geologic information is summarized on boring logs included as Attachment 3. Geologic cross-sections generated from the boring logs are included as Figures 5 through 8.

Strong to faint petroleum and chemical odors and/or elevated PID readings were noted during advancement of test borings TEC-B6 (6.6-7.6 feet below grade), TEC-B9 (12-14 feet below grade), ICOR-SB2 (3-10 feet below grade), ICOR-SB3 (10-12 feet below grade), ICOR-SB6 (12-15 feet below grade), ICOR-SB7 (5-15 feet below grade), ICOR-SB8 (1-15 feet below grade), ICOR-SB9 (2-6 feet below grade), ICOR-SB7 (2.5-7 feet below grade), MiHpt-7 (5-8 feet below grade), MiHpt-8 (11.5-12 feet below grade), MiHpt-13 (4-5 feet below grade), MiHpt-19 (1-5 feet below grade), MiHpt-20 (13.5-15 feet below grade), MiHpt-21 (5-10 feet below grade), and MiHpt-22 (7-28.5 feet below grade). Observations made during advancement of the test borings is summarized on Table 1. Soil samples collected from the SITE were analyzed for some or all of the following analysis: TPH-GRO, TPH-DRO, TPH, O&G, TCL VOCs, TCL SVOCs, PCBs, pesticides, herbicides, the dioxin 2,3,7,8-TCDD, and RCRA and PPL metals. Based on the type and concentration of metals detected, some of the samples were additionally analyzed for TCLP RCRA metals and chromium VI. A list of sampling depths and type of analysis performed on each sample are provided on Table 1.

The soil analytical results are summarized on Tables 4A, 5A, 6A, 6B, and 6C. Copies of the laboratory reports of analysis for the ICOR samples collected in 2016 are included in Attachment 5. The soil analytical results were compared to the most-current VDEQ Tier II screening concentrations for unrestricted (residential) land use (VDEQ-T2SCRs) and VDEQ Tier III screening concentrations for restricted (commercial/industrial) land use (VDEQ-T3SCCs). TPH concentrations were compared to VDEQ petroleum saturated soil standards (VDEQ-PSSSs). It should be noted that VDEQ screening levels have not been developed for many of the target constituents detected.

TPH-GRO, TPH-DRO, 10 VOCs, 17 SVOCs, 1 PCB, 3 pesticides, 1 herbicides, 2,3,7,8-TCDD, and 12 metals were detected in the soil samples at concentrations above the analytical method reporting limit (RL). Four VOCs, 8 SVOCs, 2,3,7,8-TCDD, and 11 metals were detected at concentrations above VDEQ screening levels. Detections above VDEQ screening levels were noted in both surface and subsurface soil. No detections of TPH-GRO and TPH-DRO above VDEQ-PSSSs were noted. A list of the constituents detected above screening levels is detailed below.

Constituents Detected Above VDEQ-T2SCRs

- Benzene detected above VDEQ-T2SCRs in soil samples collected from test boring ECS-B3 (from 8.5-10 feet below grade), ECS-B6 (from 5-6.5 feet below grade), ECS-B7 (from 5-6 feet below grade), MiHpt-10 (from 24.5-25.5 feet below grade), and MiHpt-22 (from 19-20 feet below grade).
- **Cyclohexane** detected above VDEQ-T2SCRs in the soil sample collected from test boring MiHpt-21 (from 9-10 feet below grade).

- Naphthalene (as a VOC and/or SVOC) detected above VDEQ-T2SCRs in soil samples collected from test boring ECS-B1 (from 2.5-4 and 8.5-10 feet below grade), ECS-B2 (from 13.5-15 feet below grade), ECS-B3 (from 13.5-15 feet below grade), ECS-B4 (from 13.5-15 and 23.5-25 feet below grade), ECS-B5 (from 33.5-35 feet below grade), ECS-B6 (from 18.5-20 feet below grade), ECS-B7 (from 5-6 feet below grade), MiHpt-10 (from 24.5-25.5 feet below grade), and MiHpt-22 (from 19-20 feet below grade).
- **Tetracholoroethene (PCE)** detected above VDEQ-T2SCRs in the soil samples collected from test boring MiHpt-21 (from 9-10 feet below grade).
- **Xylenes** detected above VDEQ-T2SCRs in soil samples collected from test boring MiHpt-21 (from 9-10 feet below grade) and MiHpt-22 (from 19-20 feet below grade).
- **Benzo(a)anthracene** detected above VDEQ-T2SCRs in the soil sample collected from test boring MiHpt-10 (from 24.5-25.5 feet below grade).
- **Benzo(a)pyrene** detected above VDEQ-T2SCRs in the soil sample collected from test boring MiHpt-10 (from 24.5-25.5 feet below grade).
- **Benzo(b)fluoranthene** detected above VDEQ-T2SCRs in the soil sample collected from test boring MiHpt-10 (from 24.5-25.5 feet below grade).
- **Dibenz(a,h)anthracene** detected above VDEQ-T2SCRs in the soil sample collected from test boring MiHpt-10 (from 24.5-25.5 feet below grade).
- **Dibenzofuran** detected above VDEQ-T2SCRs in the soil sample collected from test boring MiHpt-10 (from 24.5-25.5 feet below grade).
- Indeno(1,2,3-c,d)pyrene detected above VDEQ-T2SCRs in the soil sample collected from test boring MiHpt-10 (from 24.5-25.5 feet below grade).
- Antimony detected above VDEQ-T2SCRs in soil samples collected from test boring ICOR-SB10 (from 2-3 feet below grade), MiHpt-6 (from 4-5 feet below grade), MiHpt-13 (from 1-2 feet below grade), MiHpt-14 (from 1-2 feet below grade), MiHpt-17 (from 1-2 feet below grade), and MiHpt-20 (from 1.5-2.5 feet below grade).
- Arsenic detected above VDEQ-T2SCRs in soil samples collected from test boring ECS-B1 (from 1-2.5 feet below grade), ECS-B2 (from 5-6.5 feet below grade), ECS-B5 (from 5-6.5 feet below grade), ECS-B6 (from 23.5-25 feet below grade), ECS-B7 (from 1-2 and 2.5-10 feet below grade), ECS-B8 (from 2.5-4 feet below grade), ECS-B9 (from 2.5-10 feet below grade), ECS-B10 (from 4-10 feet below grade), ECS-B11 (from 5-10 feet below grade), ECS-B12 (from 5-10 feet below grade), ICOR-SB1 (from 1-2 and 4-6 feet below grade), ICOR-SB2 (from 3-4 feet below grade), ICOR-SB5 (from 6-7 feet below grade), ICOR-SB7 (from 7.5-8.5 feet below grade), ICOR-SB8 (from 2-3 and 7.5-8.5 feet below grade), ICOR-SB9 (from 4.5-5.5 feet below grade), ICOR-SB10 (from 2-3 and 5.5-6.5 feet below grade), ICOR-SB11 (from 5.5-6.5 feet below grade), ICOR-SB12 (from 6-7 feet below grade), ICOR-SB13 (from 5.5-6.5 feet below grade), MiHpt-3 (from 4-5 feet below grade), MiHpt-4 (from 1-2 and 4-5 feet below grade), MiHpt-6 (from 4-5 feet below grade), MiHpt-12 (from 1-2 feet below grade), MiHpt-13 (from 1-2 and 4-5 feet below grade), MiHpt-14 (from 1-2 and 4-5 feet below grade), MiHpt-15 (from 1-2 and 4-5 feet below grade), MiHpt-16 (from 8-9 feet below grade), MiHpt-17 (from 1-2 and 4-5 feet below grade), MiHpt-18 (from 1-2 feet below grade), MiHpt-19 (from 1-2 and 4-5 feet below grade), MiHpt-20 (from 1.5-2.5 and 4-5 feet below grade), MiHpt-21 (from 4.5-5.5 feet below grade), and MiHpt-22 (from 1-2 and 4.5-5.5 feet below grade).
- Cadmium detected above VDEQ-T2SCRs in soil samples collected from test boring ECS-B2 (from 5-6.5 feet below grade), ECS-B7 (from 1-2 and 2.5-10 feet below grade),

- ECS-B8 (from 2.5-4 feet below grade), MiHpt-13 (from 1-2 feet below grade), MiHpt-14 (from 1-2 feet below grade), and MiHpt-17 (from 1-2 feet below grade).
- Chromium detected above VDEQ-T2SCRs in soil samples collected from test boring ECS-B1 (from 1-2.5 feet below grade), ECS-B2 (from 5-6.5 feet below grade), ECS-B5 (from 5-6.5 feet below grade), ECS-B6 (from 23.5-25 feet below grade), ECS-B7 (from 1-2 and 2.5-10 feet below grade), ECS-B8 (from 2.5-4 feet below grade), ECS-B9 (from 2.5-10 feet below grade), ECS-B10 (from 4-10 feet below grade), ECS-B11 (from 5-10 feet below grade), ECS-B12 (from 5-10 feet below grade), ICOR-SB2 (from 3-4 feet below grade), ICOR-SB6 (from 2-2 feet below grade), ICOR-SB7 (from 7.5-8.5 feet below grade), ICOR-SB8 (from 2-3 and 7.5-8.5 feet below grade), ICOR-SB9 (from 4.5-5.5 feet below grade), ICOR-SB10 (from 2-3 and 5.5-6.5 feet below grade), ICOR-SB11 (from 5.5-6.5 feet below grade), ICOR-SB12 (from 6-7 feet below grade), ICOR-SB13 (from 5.5-6.5 feet below grade), MiHpt-3 (from 1-2 feet below grade), MiHpt-13 (from 1-2 feet below grade), MiHpt-15 (from 1-2 feet below grade), MiHpt-17 (from 1-2 feet below grade), MiHpt-15 (from 1-2 feet below grade), MiHpt-17 (from 1-2 feet below grade), MiHpt-20 (from 1.5-2.5 feet below grade), and MiHpt-22 (from 1-2 feet below grade).
- Copper detected above VDEQ-T2SCRs in soil samples collected from test boring ICOR-SB10 (from 2-3 feet below grade), MiHpt-6 (from 4-5 feet below grade), MiHpt-13 (from 1-2 feet below grade), MiHpt-14 (from 1-2 and 4-5 feet below grade), MiHpt-17 (from 1-2 feet below grade), and MiHpt-20 (from 1.5-2.5 feet below grade).
- Lead detected above VDEQ-T2SCRs in soil samples collected from test boring ECS-B2 (from 5-6.5 feet below grade), ECS-B7 (from 1-2 and 2.5-10 feet below grade), ECS-B8 (from 2.5-4 feet below grade), ECS-B11 (from 5-10 feet below grade), ICOR-SB10 (from 2-3 feet below grade), MiHpt-6 (from 4-5 feet below grade), MiHpt-13 (from 1-2 feet below grade), MiHpt-14 (from 1-2 and 4-5 feet below grade), MiHpt-17 (from 1-2 feet below grade), and MiHpt-20 (from 1.5-2.5 feet below grade).
- Mercury detected above VDEQ-T2SCRs in soil samples collected from test boring ECS-B2 (from 5-6.5 feet below grade), ECS-B7 (from 1-2 and 2.5-10 feet below grade), ECS-B8 (from 2.5-4 feet below grade), ICOR-SB10 (from 2-3 feet below grade), MiHpt-13 (from 1-2 feet below grade), MiHpt-14 (from 1-2 and 4-5 feet below grade), MiHpt-17 (from 1-2 feet below grade), and MiHpt-20 (from 1.5-2.5 feet below grade).
- Selenium detected above VDEQ-T2SCRs in soil samples collected from test boring ECS-B2 (from 5-6.5 feet below grade), ECS-B7 (from 1-2 and 2.5-10 feet below grade), ECS-B8 (from 2.5-4 feet below grade), ICOR-SB10 (from 2-3 feet below grade), MiHpt-6 (from 4-5 feet below grade), MiHpt-13 (from 1-2 feet below grade), and MiHpt-17 (from 1-2 feet below grade).
- Silver detected above VDEQ-T2SCRs in soil samples collected from test boring ECS-B2 (from 5-6.5 feet below grade), ECS-B7 (from 1-2 and 2.5-10 feet below grade), ECS-B8 (from 2.5-4 feet below grade), ECS-B11 (from 5-10 feet below grade), ICOR-SB10 (from 2-3 feet below grade), MiHpt-6 (from 4-5 feet below grade), MiHpt-13 (from 1-2 feet below grade), MiHpt-14 (from 1-2 feet below grade), MiHpt-17 (from 1-2 feet below grade), and MiHpt-20 (from 1.5-2.5 feet below grade).
- Thallium detected above VDEQ-T2SCRs in soil samples collected from test boring ICOR-SB10 (from 2-3 feet below grade), MiHpt-6 (from 4-5 feet below grade), MiHpt-13 (from 1-2 feet below grade), and MiHpt-14 (from 1-2 feet below grade).

■ Zinc detected above VDEQ-T2SCRs in soil samples collected from test boring ICOR-SB6 (from 2-2 feet below grade), ICOR-SB10 (from 2-3 and 5.5-6.5 feet below grade), ICOR-SB12 (from 6-7 feet below grade), ICOR-SB13 (from 5.5-6.5 feet below grade), MiHpt-13 (from 1-2 feet below grade), MiHpt-14 (from 1-2 feet below grade), MiHpt-17 (from 1-2 feet below grade), and MiHpt-20 (from 1.5-2.5 feet below grade).

Constituents Detected Above VDEQ-T3SCCs

- **Benzo(a)pyrene** detected above VDEQ-T3SCCs in the soil sample collected from test boring MiHpt-10 (from 24.5-25.5 feet below grade).
- **2,3,7,8-TCDD** detected above VDEQ-T3SCCs in the soil sample collected from test boring MiHpt-19 (from 24.5-25.5 feet below grade).
- Arsenic detected above VDEQ-T3SCCs in soil samples collected from test boring ECS-B1 (from 1-2.5 feet below grade), ECS-B7 (from 1-2 and 2.5-10 feet below grade), ECS-B8 (from 2.5-4 feet below grade), ECS-B11 (from 5-10 feet below grade), ICOR-SB7 (from 7.5-8.5 feet below grade), ICOR-SB8 (from 2-3 feet below grade), ICOR-SB10 (from 2-3 and 5.5-6.5 feet below grade), MiHpt-3 (from 4-5 feet below grade), MiHpt-4 (from 4-5 feet below grade), MiHpt-16 (from 4-5 feet below grade), MiHpt-12 (from 1-2 feet below grade), MiHpt-13 (from 1-2 and 4-5 feet below grade), MiHpt-17 (from 1-2 feet below grade), MiHpt-19 (from 1-2 and 4-5 feet below grade), and MiHpt-22 (from 1-2 and 4.5-5.5 feet below grade).
- **Chromium** detected above VDEQ-T3SCCs in soil samples collected from test boring ECS-B1 (from 1-2.5 feet below grade), ECS-B2 (from 5-6.5 feet below grade), ECS-B5 (from 5-6.5 feet below grade), and ECS-B6 (from 23.5-25 feet below grade).
- Copper detected above VDEQ-T3SCCs in soil samples collected from test boring MiHpt-13 (from 1-2 feet below grade) and MiHpt-17 (from 1-2 feet below grade).
- Lead detected above VDEQ-T3SCCs in soil samples collected from test boring ECS-B7 (from 2.5-10 feet below grade), ICOR-SB10 (from 2-3 feet below grade), MiHpt-6 (from 4-5 feet below grade), MiHpt-13 (from 1-2 feet below grade), and MiHpt-17 (from 1-2 feet below grade).
- Mercury detected above VDEQ-T3SCCs in soil samples collected from test boring ECS-B7 (from 2.5-10 feet below grade), ECS-B8 (from 2.5-4 feet below grade), ICOR-SB10 (from 2-3 feet below grade), MiHpt-13 (from 1-2 feet below grade), MiHpt-14 (from 1-2 and 4-5 feet below grade), and MiHpt-17 (from 1-2 feet below grade).
- Thallium detected above VDEQ-T3SCCs in soil samples collected from test boring ICOR-SB10 (from 2-3 feet below grade), MiHpt-6 (from 4-5 feet below grade), MiHpt-13 (from 1-2 feet below grade), and MiHpt-14 (from 1-2 feet below grade).

Two samples with elevated concentrations of RCRA metals were also analyzed for TCLP RCRA metals to evaluate the leachability of the metals and disposal characteristics. One of the samples that contained elevated concentrations of chromium was also analyzed for chromium VI. Chromium VI was not detected in the sample; thus, the type of chromium present at the SITE is likely chromium III (the least hazardous type).

Isoconcentration maps prepared from historical soil analytical data for TPH-GRO, TPH-DRO, benzene, naphthalene, and arsenic are included as Figures 9 through 13. With the exception of arsenic, the maps provide maximum concentrations of constituents for three soil intervals, 0-5, 5-10, and 10-15 feet below grade. Since most of the arsenic samples were collected within the upper 5 feet of soil underlying the SITE, the arsenic isoconcentration map only shows the maximum concentration detected within this interval.

The most significant impacts appear to be associated with VOCs, SVOCs, and metals and extend from the surface into the shallow subsurface (upper 10-20 feet). The more elevated levels were observed on the western and southern portions of the SITE. The impacts may be associated with the past use of the SITE for bulk oil storage, fertilizer storage, coal storage, chemical mixing and manufacturing, and/or warehouse operations. These areas also correspond to the SITE property boundaries with the majority of the former bulk storage and Bogle chemical manufacturing facility (western property boundary) and ATGS's Oronoco Street outfall treatment system (southern property boundary). The aforementioned off-site properties of concern are hydraulically upgradient of the SITE and have documented soil and groundwater impacts, some of which are at a higher degree and extent then noted at the SITE (e.g., arsenic impacts along the western property boundary); thus, the off-site properties may be a source and/or contributor to impacts noted at the SITE.

7.3 **Groundwater Quality**

Groundwater is present beneath the SITE at depths ranging from approximately 5 to 10.5 feet below grade. Groundwater measurement data collected from the SITE is provided on Table 3. Groundwater contours prepared from groundwater measurements collected during the September 2016 and February 2017 groundwater sampling events indicate groundwater flow is to the east-northeast (towards the Potomac River). A groundwater contour map is included as Figure 14. Groundwater is not believed to be tidally influenced.

Petroleum odors were noted during collection of groundwater samples from wells MiHpt-5, MiHpt-7, MiHpt-14, MiHpt-15, MiHpt-20, MiHpt-21, and MiHpt-22. Odors were not observed in the deep groundwater samples. Shallow and deep groundwater samples collected from the SITE were analyzed for some or all of the following analysis: TPH-GRO, TPH-DRO, TPH, O&G, TCL VOCs, TCL SVOCs, PCBs, pesticides, herbicides, and total and dissolved PPL metals. The historical groundwater analytical results are summarized on Tables 4B, 5B, and 7A-7D. Copies of the laboratory reports of analysis for the 2016 and 2017 sampling events are included in Attachment 5. The type of analysis performed on each sample is summarized on Table 1.

The groundwater analytical results were compared to the most-current VDEQ Tier III screening levels for unrestricted (residential) land use inhalation of indoor air (VDEQ-T3RSLs), restricted (commercial/industrial) land use inhalation of indoor air (VDEQ-T3CSLs), and Tier III construction worker in a trench, groundwater contacted and not contacted (VDEQ-T3CWTs). The most-recent analytical results were also compared to VDEQ Water Quality Standards for fresh chronic and other surface waters (VDEQ-WQSFCs and VDEQ-WQSOSWs, respectively) and VDEQ general permit discharge standards for petroleum contaminated water (VDEQ-PDSs).

It should be noted that VDEQ groundwater and surface water screening levels have not been developed for many of the target constituents detected.

Shallow Groundwater

PCBs and pesticides were not detected above RLs in the shallow groundwater samples. TPH-GRO, TPH-DRO, 12 VOCs, 16 SVOCs, 3 herbicides, and 11 metals were detected in the shallow groundwater samples at concentrations above the RL. TPH-GRO, 11 VOCs, 4 SVOCs, and 9 metals were detected at concentrations above VDEQ groundwater and/or surface water screening levels. A list of the constituents detected above screening levels is detailed below.

Constituents Detected Above VDEQ-T3RSLs

- **Chloroform** detected above VDEQ-T3RSLs in a groundwater sample collected from permanent well MiHpt-15.
- Cyclohexane detected above VDEQ-T3RSLs in groundwater samples collected from the temporary well installed at boring ICOR-SB8 and permanent wells ECS-MW2 and MiHpt-21.
- **Ethylbenzene** detected above VDEQ-T3RSLs in groundwater samples collected from the temporary well installed at boring ICOR-SB8 and permanent wells ECS-MW2, MiHpt-7, and MiHpt-21.
- **Methylcyclohexane** detected above VDEQ-T3RSLs in groundwater samples collected from the temporary well installed at boring ICOR-SB8 and permanent wells ECS-MW2 and MiHpt-21.
- Naphthalene (as a VOC and SVOC) detected above VDEQ-T3RSLs in groundwater samples collected from the temporary wells installed at borings ICOR-SB5, ICOR-SB6, and ICOR-SB8 and permanent wells ECS-MW2, MiHpt-5, MiHpt-7, MiHpt-8, MiHpt-14, MiHpt-15, MiHpt-21, and MiHpt-22.
- **PCE** detected above VDEQ-T3RSLs in groundwater samples collected from permanent well MiHpt-21.
- **Tricholoroethene** (TCE) detected above VDEQ-T3RSLs in groundwater samples collected from permanent well MiHpt-21.
- **Xylenes** detected above VDEQ-T3RSLs in groundwater samples collected from permanent wells MiHpt-5, MiHpt-7, and MiHpt-21.
- **Biphenyl (Diphenyl)** detected above VDEQ-T3RSLs in groundwater samples collected from the temporary well installed at boring ICOR-SB9 and permanent well MiHpt-7.
- **Mercury** detected above VDEQ-T3RSLs in groundwater samples collected from the temporary wells installed at borings ICOR-SB1, ICOR-SB5, and ICOR-SB9 and permanent well ECS-MW2.

Constituents Detected Above VDEQ-T3CSLs

- **Chloroform** detected above VDEQ-T3CSLs in a groundwater sample collected from permanent well MiHpt-15.
- Cyclohexane detected above VDEQ-T3CSLs in groundwater samples collected from the temporary well installed at boring ICOR-SB8 and permanent wells ECS-MW2 and MiHpt-21.

- Ethylbenzene detected above VDEQ-T3CSLs in groundwater samples collected from the temporary well installed at boring ICOR-SB8 and permanent wells ECS-MW2, MiHpt-7, and MiHpt-21.
- **Methylcyclohexane** detected above VDEQ-T3CSLs in groundwater samples collected from the temporary well installed at boring ICOR-SB8 and permanent wells ECS-MW2 and MiHpt-21.
- Naphthalene (as a VOC and SVOC) detected above VDEQ-T3CSLs in groundwater samples collected from the temporary wells installed at borings ICOR-SB5, ICOR-SB6, and ICOR-SB8 and permanent wells ECS-MW2, MiHpt-5, MiHpt-7, MiHpt-8, MiHpt-14, MiHpt-15, MiHpt-21, and MiHpt-22.
- PCE detected above VDEQ-T3CSLs in groundwater samples collected from permanent well MiHpt-21.
- TCE detected above VDEQ-T3CSLs in groundwater samples collected from permanent well MiHpt-21.
- **Xylenes** detected above VDEQ-T3CSLs in groundwater samples collected from permanent well MiHpt-21.
- Mercury detected above VDEQ-T3CSLs in groundwater samples collected from the temporary wells installed at borings ICOR-SB1 and ICOR-SB9 and permanent well ECS-MW2.

Constituents Detected Above VDEQ-CWTs

- **Benzene** detected above VDEQ-CWTs in groundwater samples collected from the temporary wells installed at borings ICOR-SB5, ICOR-SB6, and ICOR-SB8 and permanent wells ECS-MW2, MiHpt-5, MiHpt-7, MiHpt-14, MiHpt-21, and MiHpt-22.
- **Chloroform** detected above VDEQ-CWTs in a groundwater sample collected from permanent well MiHpt-15.
- Ethylbenzene detected above VDEQ-CWTs in groundwater samples collected from the temporary well installed at borings ICOR-SB8 and permanent wells MiHpt-7 and MiHpt-21.
- **Methylcyclohexane** detected above VDEQ-CWTs in groundwater samples collected from permanent well MiHpt-21.
- Naphthalene (as a VOC and SVOC) detected above VDEQ-CWTs in groundwater samples collected from the temporary wells installed at borings ICOR-SB5, ICOR-SB6, ICOR-SB8, and ICOR-SB9 and permanent wells ECS-MW2, MiHpt-5, MiHpt-7, MiHpt-8, MiHpt-14, MiHpt-15, MiHpt-21, and MiHpt-22.
- **PCE** detected above VDEQ-CWTs in groundwater samples collected from permanent well MiHpt-21.
- TCE detected above VDEQ-CWTs in groundwater samples collected from permanent well MiHpt-21.
- **Xylenes** detected above VDEQ-CWTs in groundwater samples collected from permanent wells ECS-MW2 and MiHpt-21.
- **Biphenyl (Diphenyl)** detected above VDEQ-CWTs in groundwater samples collected from the temporary well installed at boring ICOR-SB9.
- Cadmium detected above VDEQ-CWTs in a groundwater sample collected from permanent well MiHpt-5.

- **Chromium** detected above VDEQ-CWTs in groundwater samples collected from the temporary wells installed at borings ICOR-SB5 and ICOR-SB6 and permanent wells ECS-MW2 and MiHpt-5.
- **Copper** detected above VDEQ-CWTs in groundwater samples collected from permanent well MiHpt-5.

Constituents Detected Above VDEQ-PDSs

- **TPH-GRO** detected above VDEQ-PDSs in a groundwater sample collected from permanent well MiHpt-21.
- **Benzene** detected above VDEQ-PDSs in groundwater samples collected from permanent wells MiHpt-5, MiHpt-7, MiHpt-14, MiHpt-20, MiHpt-21, and MiHpt-22.
- **Ethylbenzene** detected above VDEQ-PDSs in groundwater samples collected from permanent wells MiHpt-5, MiHpt-7, MiHpt-14, MiHpt-21, and MiHpt-22.
- Naphthalene (as a VOC and SVOC) detected above VDEQ-PDSs in groundwater samples collected permanent wells MiHpt-5, MiHpt-7, MiHpt-8, MiHpt-14, and MiHpt-20.
- PCE detected above VDEQ-PDSs in groundwater samples collected from permanent well MiHpt-21.
- **Toluene** detected above VDEQ-PDSs in groundwater samples collected from permanent well MiHpt-21.
- **Tricholoroethene (TCE)** detected above VDEQ-PDSs in groundwater samples collected from permanent well MiHpt-21.
- **Xylenes** detected above VDEQ-PDSs in groundwater samples collected from permanent wells MiHpt-5 and MiHpt-7.
- **Lead** detected above VDEQ-PDSs in groundwater samples collected from permanent wells TEC-MW4, MiHpt-5, and MiHpt-8.

Constituents Detected Above VDEQ-WQSFCs

- **Pentachlorophenol** detected above VDEQ-WQSFCs in groundwater samples collected from permanent well MiHpt-21.
- **Arsenic** detected above VDEQ-WQSFCs in groundwater samples collected from permanent wells MiHpt-5, MiHpt-15, MiHpt-21, and MiHpt-22.
- Cadmium detected above VDEQ-WQSFCs in groundwater samples collected from permanent wells MiHpt-5, MiHpt-14, MiHpt-15, and MiHpt-20.
- **Chromium** detected above VDEQ-WQSFCs in groundwater samples collected from permanent well MiHpt-5.
- **Copper** detected above VDEQ-WQSFCs in groundwater samples collected from permanent wells TEC-MW4, MiHpt-5, MiHpt-8, MiHpt-14, MiHpt-15, and MiHpt-20.
- Lead detected above VDEQ-WQSFCs in groundwater samples collected from permanent wells TEC-MW4, MiHpt-5, and MiHpt-8.
- **Nickel** detected above VDEQ-WQSFCs in groundwater samples collected from permanent well MiHpt-5.
- **Selenium** detected above VDEQ-WQSFCs in groundwater samples collected from permanent wells MiHpt-5, MiHpt-15, and MiHpt-20.

■ **Zinc** detected above VDEQ-WQSFCs in groundwater samples collected from permanent wells TEC-MW2, MiHpt-5, MiHpt-14, MiHpt-15, and MiHpt-20.

Constituents Detected Above VDEQ-WQSOSWs

- **Benzene** detected above VDEQ-WQSOSWs in groundwater samples collected from permanent well MiHpt-22.
- PCE detected above VDEQ-WQSOSWs in groundwater samples collected from permanent well MiHpt-21.
- **2,4-Dichlorophenol** detected above VDEQ-WQSOSWs in groundwater samples collected from permanent well MiHpt-21.
- **Thallium** detected above VDEQ-WQSOSWs in groundwater samples collected from permanent wells MiHpt-5, MiHpt-15, and MiHpt-20.
- **Zinc** detected above VDEQ-WQSOSWs in groundwater samples collected from permanent well MiHpt-5.

Deep Groundwater

TPH-GRO, TPH, and O&G were not detected above RLs in the deep groundwater samples. TPH-DRO, five VOCs, and two SVOCs were detected in the deep groundwater samples at concentrations above the RL. One VOC was detected at concentrations above VDEQ-T3RSLs. No detections above VDEQ-T3CSLs, VDEQ-CWLs, VDEQ-PDSs, VDEQ-WQSFCs, and VDEQ-WQSOSWs were noted. A list of the constituents detected above screening levels is detailed below.

Constituents Detected Above VDEQ-T3RSLs

• Naphthalene (as a VOC) detected above VDEQ-T3RSLs in a groundwater sample collected from Screen Point advanced at location MiHpt-10.

In general, the concentration of constituents detected in groundwater appears to be relatively stable and is concentrated in the shallow subsurface. Isoconcentration maps prepared from groundwater analytical data collected during the two most-recent permanent well sampling events for TPH-GRO, TPH-DRO, benzene, naphthalene, and arsenic (for shallow and deep groundwater if collected) are included as Figures 15 through 19.

The most significant impacts appear to be associated with VOCs, SVOCs, and metals. The more elevated levels were observed on the western and southern portions of the SITE. The impacts may be associated with the past use of the SITE for bulk oil storage, fertilizer storage, coal storage, chemical mixing and manufacturing, and/or warehouse operations. These areas also correspond to the SITE property boundaries with the majority of the former bulk storage and Bogle chemical manufacturing facility (western property boundary) and ATGS's Oronoco Street outfall treatment system (southern property boundary). The aforementioned off-site properties of concern are hydraulically upgradient of the SITE and have documented soil and groundwater impacts, some of which are at a higher degree and extent then noted at the SITE (e.g., arsenic impacts along the western property boundary); thus, the off-site properties may be a source and/or contributor to impacts noted at the SITE.

7.4 Soil Gas Quality

The sub-slab and deep soil gas analytical results are summarized on Tables 8 and 9, respectively. Copies of the laboratory reports of analysis are included in Attachment 5.

The sub-slab soil gas analytical results were compared to the most-current VDEQ Tier III residential and commercial sub-slab soil gas screening levels for inhalation of indoor air (VDEQ-T3RSSGs and VDEQ-T3CSSGs, respectively) and the deep soil gas samples were compared to the most-current VDEQ Tier III residential and commercial deep soil gas screening levels for inhalation of indoor air (VDEQ-T3RDSGs and VDEQ-T3CDSGs, respectively) and VDEQ Tier III construction worker soil gas screening levels for inhalation of air in a trench (VDEQ-T3CWs).

Sub-Slab Soil Gas

A total of 15 VOCs were detected above RLs in the sub-slab soil gas samples. None of the VOCs were detected at concentrations exceeding VDEQ-T3RSSGs and VDEQ-T3CSSGs.

Deep Soil Gas

A total of 20 VOCs were detected above RLs in the sub-slab soil gas samples. None of the VOCs were detected at concentrations exceeding VDEQ-T3RDSGs, VDEQ-T3CDSGs, and VDEQ-T3CWs.

The presence of VOCs in soil gas is likely associated with the volatilization of VOCs from soil and groundwater. The VOCs may be associated with the past use of the SITE for bulk oil storage, fertilizer storage, coal storage, chemical mixing and manufacturing, and/or warehouse operations. The highest concentrations of VOCs in soil gas were detected near the SITE's property boundary with the ATGS's Oronoco Street outfall treatment system (southern property boundary) The ATGS is located hydraulically upgradient of the SITE and has documented soil and groundwater impacts; thus, the ATGS may be a source and/or contributor to impacts noted at the SITE.

8.0 SENSITIVE RECEPTOR SURVEY

ICOR developed a Conceptual Site Model (CSM) that identifies potential receptors and potential pathways of exposure to these receptors under current land use (vacant property with limited access) and future land use (commercial, retail, residential, or mixed use) scenarios and during construction in order to complete the risk (exposure) assessment for purposes of 9 VAC 25-580-260. The CSM is included as Figure 20. The CSM details the following:

• **Primary Release Mechanism**. Identification of the primary mechanisms by which the SITE became or continues to be impacted. The impacts appear to be the result of past site operations, with significant contribution from past operations at adjacent and nearby properties. No release mechanisms currently exist.

- Source Media. Identification of the affected media that continues to be a source of impacts. Source media at the SITE appears to be limited to impacted surface and subsurface soil.
- **Migration Pathway**. Identification of potential pathways by which impacted media can lead to potential exposure. Potential pathways identified included surface water runoff, biological uptake, leaching, and volatilization and diffusion.
- Exposure Media. Identification of media that provides a potential pathway of exposure. Potential exposure media identified include surface water and sediment, plants and animals, groundwater, and vapor.
- **Exposure Routes**. Identification of the routes by which exposure to impacted media may occur. Exposure routes identified include ingestion, dermal contact, and inhalation.
- **Potential Receptors**. Identification of potential receptors that could be exposed under current land use, future land use, and during construction.

Current Site Use Scenario

ICOR believes that in the SITE's current use scenario, no potential pathways of exposure are complete. Potential receptors considered under this scenario include authorized site visitors and occasional workers and trespassers. ICOR's opinion is based on the following:

- All structures are currently vacant and access to the SITE is limited to authorized visitors and unauthorized access is restricted by fencing and locked building doors.
- Soil and groundwater impacts are limited and localized in extent and the vast majority of the SITE surface, including the areas where the highest degree of soil and groundwater impacts was identified, is covered by buildings (constructed on thick concrete slabs) or pavement limiting the potential for contact with impacted media. The surfaced areas also limit the potential for erosion, surface water runoff, formation of dusts, and VI.
- The potential for impacted groundwater to discharge into the nearby Potomac River exists; however, the concentrations of constituents detected in the wells located nearest to the shoreline contained COPCs at relatively low concentrations with the exception of the metals lead and zinc. Lead and zinc have relatively low mobility and are not expected to migrate readily or extensively. The potential risks to surface water will be further assessed through proposed follow-up groundwater sampling and modelling.
- The SITE is not used for agricultural purposes and ICOR is not aware of any sensitive animal species living on or using the SITE for any purpose.
- Groundwater is not used at the SITE or in the City as a potable or irrigation water source.
- The buildings are currently vacant and not used for any purpose limiting the potential for inhalation of vapors should VI occur. All utilities supplying the SITE have been disconnected. In addition, the soil gas analytical data does not suggest VOCs are present at concentrations presenting a VI risk.

ICOR also believes that the aforementioned conditions limit the risk to users of surrounding properties.

Future Site Use Scenario

ICOR believes that in the SITE's future use scenario, several potential pathways of exposure exist; however, the potential for exposure can be minimized through remediation, incorporation of engineering controls, and implementation of institutional controls. Potential receptors considered under this scenario include residents, site workers, and site visitors. Pathways of exposure that could potentially become complete include ingestion of and dermal contact with surface soil, surface water runoff, and sediment generated during erosion and inhalation of vapors via VI into newly constructed buildings and subsurface utility lines. Remediation, engineering controls, and institutional controls that may be applicable and that are expected to greatly minimize exposure risks are discussed in detail in Section 11.

ICOR believes that the proposed remediation, engineering controls, and institutional controls will also limit the risk to users of surrounding properties.

Construction Worker

If construction work involving excavation and/or disturbance or removal of existing site surfacing occurs, ICOR believes that several potential pathways of exposure exist or may become complete; however, the potential for exposure can be minimized through remediation, implementation of engineering controls, and development of safety and health procedures for workers working in and around impacted areas. The only potential receptor considered under this scenario is a construction worker. Pathways of exposure that could potentially become complete include ingestion of surface and subsurface soil, surface water runoff, sediment generated during erosion, and groundwater and inhalation of vapors via VI into open excavations and buildings under construction. Pathways of exposure likely to be considered complete include dermal contact with surface and subsurface soil, surface water runoff, sediment generated during erosion, and groundwater. Remediation, engineering controls, and institutional controls that may be applicable and that are expected to greatly minimize exposure risks are discussed in detail in Section 11.

Surrounding and Nearby Properties

Potential receptors at surrounding properties include residents at residential use properties, workers and visitors at surrounding commercial use properties, and visitors of Founders and Oronoco Bay Parks. It should be noted that the 501 Parcel is surrounded on all sides by roads or Potomac River. The 500 Parcel is surrounded by roads on its northern, eastern, and southern sides and commercial use property on its western side. The closest residential properties are located across the roads and commercial property to the northwest, west, and southwest. Adjacent property use is depicted on Figure 2.

The exposure risk to surrounding and nearby properties from SITE releases is anticipated to be minimal based on the following:

Soil and groundwater impacts appear to be limited and localized in extent and the vast majority of the impacted media is covered by buildings (constructed on thick concrete slabs) or pavement limiting the potential for disturbance of and contact with the impacted media and potential for erosion, surface water runoff, and formation of dusts.

- The potential for impacted groundwater to discharge into the nearby Potomac River exists; however, the concentrations of constituents detected in the wells located nearest to the shoreline contained COPCs at relatively low concentrations with the exception of the metals lead and zinc. Lead and zinc have relatively low mobility and are not expected to migrate readily or extensively. The potential risks to surface water will be further assessed through proposed follow-up groundwater sampling and modelling.
- Based on groundwater measurement data obtained from SITE, groundwater flow is towards the east-northeast, away from surrounding properties of concern.
- Historical and recently collected data suggest that the properties bounding the SITE to the
 west and south are hydraulically upgradient of the SITE and the data does not indicate
 that they have been impacted by the SITE.
- Groundwater is not used in the City as a potable or irrigation water source.

ICOR believes that the proposed remediation, engineering controls, and institutional controls proposed under the future SITE land use scenario and that will be implemented should construction work occur at the SITE will limit the risk to users of surrounding properties.

9.0 HUMAN HEALTH RISK ASSESSMENT

The qualitative risk to human health in the SITE's current and proposed use scenario was evaluated by comparing the concentrations of detected constituents in the sampled media to applicable VDEQ screening levels and evaluating the likelihood that current land users (vacant property with limited access scenario) and future land users (under commercial, retail, residential, or mixed use scenario) would come into contact with impacted media. Target constituents were detected above screening levels; thus, a site-specific quantitative Risk Assessment (RA) should be prepared to confirm the below opinions and satisfy VRP guidance.

Soil

The soil analytical results were compared to the most-current VDEQ-T2SCRs and VDEQ-T3SCCs. It should be noted that VDEQ screening levels have not been developed for many of the target constituents detected. Four VOCs, 8 SVOCs, 2,3,7,8-TCDD, and 11 metals were detected in soil at concentrations above VDEQ screening levels. Detections above VDEQ screening levels were noted in both surface and subsurface soil.

In the SITE's current use scenario, no potential pathways of exposure by site users (visitors, occasional workers, and trespassers) to impacted soil exist. Soil impacts are limited and localized in extent and the vast majority of the SITE surface, including the areas where the highest degree of soil impacts was identified, is covered by buildings (constructed on thick concrete slabs) or pavement limiting the potential for contact with impacted soil. The surfaced areas also limit the potential for erosion, surface water runoff, and formation of dusts. Access to the SITE is also limited to authorized visitors and unauthorized access is restricted by fencing and locked building doors.

Under the SITE's future use scenario, several potential pathways of exposure to impacted soil by site users (residents, workers, and visitors) exist; however, the potential for exposure can be minimized through remediation, incorporation of engineering controls, and implementation of institutional controls. Exposure risks to construction workers can be minimized through development and implementation of health and safety procedures to address health and safety risks posed by the presence of impacted soil. Remediation, engineering controls, and institutional controls that may be applicable and that are expected to greatly minimize exposure risks are discussed in detail in Section 11.

The vast majority of impacted soil underlying the SITE, specifically the shallow soil that would pose a threat to future residents and site workers, is expected to be excavated, removed, and transported off site for disposal or treatment during development. The removal of the bulk of impacted soil is expected to greatly reduce human health risks for future use.

Groundwater

The groundwater analytical results were compared to the most-current VDEQ-T3RSLs, VDEQ-T3CSLs, and VDEQ-T3CWTs. The most-recent analytical results were also compared to VDEQ-PDSs, VDEQ-WQSFCs, and VDEQ-WQSOSWs. It should be noted that VDEQ screening levels have not been developed for many of the target constituents detected. Ten VOCs, 2 SVOCs, and 3 metals were detected at concentrations above VDEQ-T3RSLs, VDEQ-T3CSLs, and/or VDEQ-T3CWTs in shallow groundwater. One VOC was detected at concentrations above VDEQ-T3RSLs in deep groundwater. No detections above VDEQ-T3CSLs and VDEQ-CWLs in deep groundwater were noted. TPH-GRO, 8 VOCs, 3 SVOCs, and 9 metals were detected at concentrations above VDEQ-PDSs, VDEQ-WQSFCs, and/or VDEQ-WQSOSWs.

ICOR believes that in the SITE's current use and future use scenarios, no potential pathways of exposure by site users (visitors, occasional workers, and trespassers) to impacted groundwater exist. Groundwater is not currently used and will not be used in the future at the SITE or surrounding area for any purpose and the City restricts the use of groundwater for any purpose. Groundwater impacts are limited and localized in extent and the vast majority of the SITE surface, including the areas where the highest degree of groundwater impacts was identified, is currently covered by buildings (constructed on thick concrete slabs) or pavement limiting the potential for contact with impacted groundwater. Access to the SITE is also currently limited to authorized visitors and unauthorized access is restricted by fencing and locked building doors.

In the SITE's future use scenario, the potential for exposure can be minimized through remediation, incorporation of engineering controls, and implementation of institutional controls. Exposure risks to construction workers can be minimized through development and implementation of health and safety procedures to address health and safety risks posed by the presence of impacted groundwater. Remediation, engineering controls, and institutional controls that may be applicable and that are expected to greatly minimize exposure risks are discussed in detail in Section 11. Following development, the vast majority of the SITE surface will be covered by new structures, pavement, and hardscape limiting the potential to come into contact with impacted groundwater.

The removal of the bulk of impacted soil during development is expected to reduce the concentration of constituents in groundwater and greatly reduce human health risks for future use. In addition, excavation below the water table is anticipated during development, which will require dewatering. Dewatering efforts are expected to reduce constituent concentrations in groundwater and improve groundwater quality, resulting in a reduction of human health risks for future use.

Soil Gas (Vapor Intrusion)

The sub-slab soil gas analytical results were compared to the most-current VDEQ-T3RSSGs and VDEQ-T3CSSGs and the deep soil gas samples were compared to the most-current VDEQ-T3RDSGs, VDEQ-T3CDSGs, and VDEQ-T3CWs. VOCs were not detected in sub-slab and deep soil gas samples at concentrations exceeding VDEQ screening levels; thus, the risk posed to site current site users (visitors, occasional workers, and trespassers) appears to be minimal. Soil and groundwater impacts which are the source of potential vapors are limited and localized in extent and the vast majority of the SITE surface, including the areas where the highest degree of soil and groundwater impacts was identified, is currently covered by buildings (constructed on thick concrete slabs) or pavement limiting the potential for VI. All structures are currently vacant and coess to the SITE is also currently limited to authorized visitors and unauthorized access is restricted by fencing and locked building doors.

In the SITE's future use scenario, the potential for exposure can be minimized through remediation, incorporation of engineering controls, and implementation of institutional controls. Exposure risks to construction workers can be minimized through development and implementation of health and safety procedures to address health and safety risks posed by the presence of impacted groundwater. Remediation, engineering controls, and institutional controls that may be applicable and that are expected to greatly minimize exposure risks are discussed in detail in Section 11. Following development, the vast majority of the SITE surface will be covered by new structures, pavement, and hardscape limiting the potential for VI. Newly constructed buildings will also include adequate vapor barriers and sub-slab depressurization systems, if warranted. The need for a sub-slab depressurization system will also be considered if the existing buildings will be re-occupied.

The removal of the bulk of impacted soil during development is expected to reduce the concentration of constituents in soil gas and greatly reduce human health risks for future use. In addition, excavation below the water table is anticipated during development resulting in implementation of dewatering. Dewatering efforts are expected to reduce constituent concentrations in groundwater and improve groundwater quality, resulting in a reduction of human health risks via associated VI for future use.

10.0 CONCLUSIONS

Based on the findings of the SCS, soil and groundwater beneath the SITE have been impacted by the past use of the SITE for bulk oil storage, fertilizer storage, coal storage, chemical mixing and manufacturing, and warehouse operations; however, contribution from adjacent and nearby properties that were used in the past for fertilizer storage, city gas works, chemical manufacturing and mixing, and bulk oil storage is also suspected. Of most off-site concern, is the majority of the former bulk storage of fuel and Bogle chemical manufacturing facility which operated on adjacent property to the west and former ATGS and associated Oronoco Street outfall treatment system located nearby and adjacent to the SITE's southern property boundary. The aforementioned off-site properties are situated hydraulically upgradient of the SITE and have documented soil and groundwater impacts, some of which are at a higher degree and extent then noted at the SITE (e.g., arsenic impacts along the western property boundary).

Target constituents were detected in soil and groundwater above VDEQ screening levels for residential and commercial land use, construction workers, and surface water. The presence of impacted soil, groundwater, and soil gas warrants remediation, engineering controls, and institutional controls under proposed (future) land use scenario. Remediation and engineering controls do not appear necessary under the current land use scenario; however, further study is required and institutional controls may be warranted.

11.0 PROPOSED ENGINEERING AND INSTITUTIONAL CONTROLS AND REMEDIAL ACTIONS

ICOR believes the remedial actions and institutional and engineering controls listed below are warranted to address the impacted media and protect human health and the environment in the SITE's future land use scenario (commercial, retail, residential, or mixed use). Remediation and engineering controls do not appear necessary under the current land use scenario (vacant property with limited access); however, further study is required and institutional controls may be warranted. The type of study warranted and institutional controls that may be warranted are also discussed below.

11.1 Current Land Use

ICOR believes that in the SITE's current use scenario (vacant property with limited access), no remedial actions or engineering controls are warranted to protect human health and the environment. This should be confirmed through the preparation of a site-specific quantitative RA, which is required to satisfy VRP guidance.

It should be noted that institutional controls were not considered under the current use scenario because no change in land use or improvements to the SITE were considered; however, institutional controls in the form of restrictive covenants (also considered AULs) may be warranted. Applicable restrictive covenants include restricting the use of groundwater for any purpose, maintaining site surfacing, use of sub-slab depressurization or vapor mitigation systems as necessary to prevent VI, and implementation of health and safety procedures during future maintenance or construction work at the SITE (work that involves excavation and potential contact with impacted soil and/or groundwater). Regulatory notifications should also performed as required. The restrictive covenants should also provide guidance for handling and disposing of impacted soil and groundwater removed during maintenance or construction work. It should

be noted that the City already restricts the use of groundwater for any purpose. The institutional controls should be developed by a qualified environmental professional and counsel.

Regulatory notifications, soil and groundwater management, and/or engineering controls similar to those described in Section 11.2 may be warranted in the current use scenario if disturbance of the land surface becomes warranted.

Based upon the findings of the SCS and the results of the risk (exposure) assessment, active remediation of the historic release of petroleum on the SITE does not appear warranted based upon the current use of the SITE and surrounding area; thus, ICOR believes that current conditions at the SITE meet PSTP criteria for "Case Closure" of PC# 2016-3090. Further work is required to meet VRP criteria for issuance of a "Certification of Satisfactory Completion of Remediation" under the current use scenario.

11.2 Future Land Use

To address the impacted media, remnant site features, and exposure risks in the SITE's future land use scenario (commercial, retail, residential, or mixed use), ICOR recommends that the remedial activities listed below be conducted during construction, engineering controls be incorporated into building designs, and institutional controls be placed on the SITE. The remedial activities and engineering and institutional controls needed should be based on the findings of a site-specific quantitative RA prepared prior to the start of construction. The proposed remedial activities and engineering controls should be detailed in a Remedial Action Work Plan (RAWP). Additional soil and groundwater assessment should be conducted as warranted to further assess potential risks to construction workers, allow for proper management of soil and groundwater, and verify successful implementation of the remedial actions.

Assessment, remediation, and institutional and engineering controls should be developed and implemented in accordance with VRP guidelines and with VRP oversight, review, and approval. Further work and/or notifications may be required to also satisfy PSTP requirements and guidelines. In particular, a change in conditions and associated risks resulting from disturbance during development should be thoroughly evaluated (e.g., a change results in the potential for further migration of constituents or potential to impact other media). Any change in conditions or risk warranting further assessment and/or modification to proposed remedies should be identified and addressed.

Remedial Activities

- If remnant USTs are unearthed during future development, they should be properly closed via excavation and removal with notification and approval by the VDEQ.
- Impacted soil excavated and removed during construction and deemed not suitable for beneficial reuse on or off site should be properly manifested and disposed or treated at a facility permitted to accept the soil. The removal and transport of impacted soil should be conducted by qualified contractors. Confirmation soil samples should be collected before the start of construction and following excavation activities to confirm all

- unacceptably impacted soil has been removed and to provide information on any residual impacts remaining in soil for development of engineering and institutional controls.
- If development plans include excavation and construction below the water table and groundwater dewatering is warranted, all water generated during dewatering should be characterized prior to discharge and treated if required to meet applicable federal, state, and local discharge requirements. All required federal, state, and local permits should also be obtained before discharge. Sampling and monitoring of the treatment and discharge and associated reporting should be conducted as required by overseeing regulatory agencies. System design and installation and system sampling, monitoring, and reporting should be conducted by qualified environmental professionals and contractors.

Engineering Controls

- To prevent vapors from migrating into newly constructed buildings, an adequate vapor barrier should be incorporated into the building designs. A sub-slab depressurization system may also be warranted and should be incorporated into the building designs if deemed necessary. The need for a sub-slab depressurization system should also be considered if the existing buildings will be re-occupied. The vapor barrier and sub-slab depressurization system should be designed by a qualified environmental professional.
- To limit the potential for exposure to impacted soil containing target constituents at elevated concentrations, over-excavation of areas not surfaced by impervious surfacing (e.g., buildings, pavement, hardscape, etc.) should be considered. ICOR suggests a minimum of 2 feet of impacted soil be over-excavated and replaced with fill originating from the SITE or imported. If on-site fill is used, the fill should meet VDEQ standards for beneficial reuse.

Institutional Controls

To satisfy VRP requirements, two institutional controls, in the form of restrictive covenants, should be placed on the SITE. The first restrictive covenant should restrict the use of groundwater for any purpose. It should be noted that the City already restricts the use of groundwater for any purpose. The second restrictive covenant should detail health and safety procedures to be implemented during future maintenance or construction work at the SITE that involves excavation and potential contact with impacted soil and/or groundwater. The restriction should also provide guidance for handling and disposing of impacted soil and groundwater removed during maintenance or construction work. The third restriction would require impervious surfacing (e.g. buildings, pavement, hardscape, etc.) or minimum of 2 feet of soil meeting land use requirements in non-impervious surfaced areas post development to limit the potential for exposure to impacted soil. Finally, a restrictive covenant requiring maintenance of vapor barriers and operation and maintenance of sub-slab depressurization or vapor mitigation systems as necessary to prevent VI. The institutional controls should be developed by a qualified environmental professional and counsel.

Follow-up Assessment Activities

- Groundwater samples should be collected for laboratory analysis from select permanent wells on at least two additional occasions (separated by a minimum of 3 months) to obtain additional data for use in developing a RA and further assessing groundwater flow. Laboratory analysis should be limited to analytes detected at elevated concentrations during the previous sampling events (TPH-GRO, TPH-DRO, VOCs, SVOCs, and metals).
- Upon approval of the final building design, additional soil and groundwater samples should be collected as warranted to allow for better management of excavated soil and groundwater and construction worker health and safety. The follow-up assessment activities should be conducted by a qualified environmental contractor.

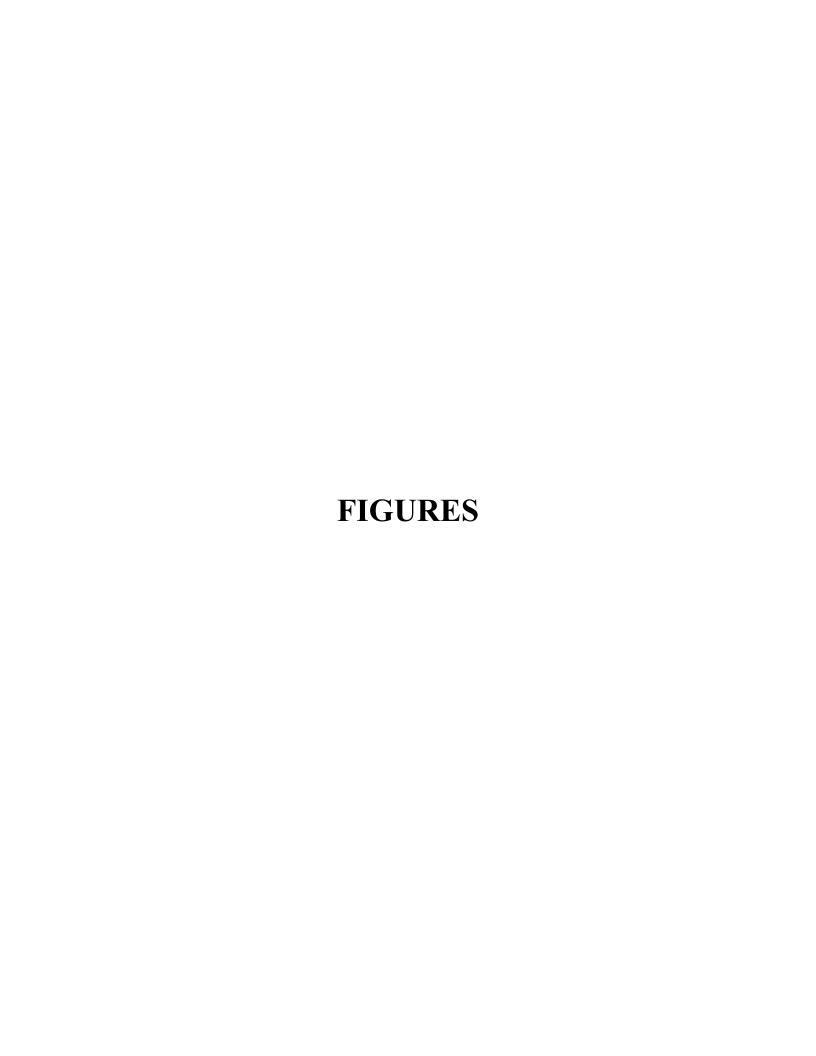
Construction Worker Health and Safety

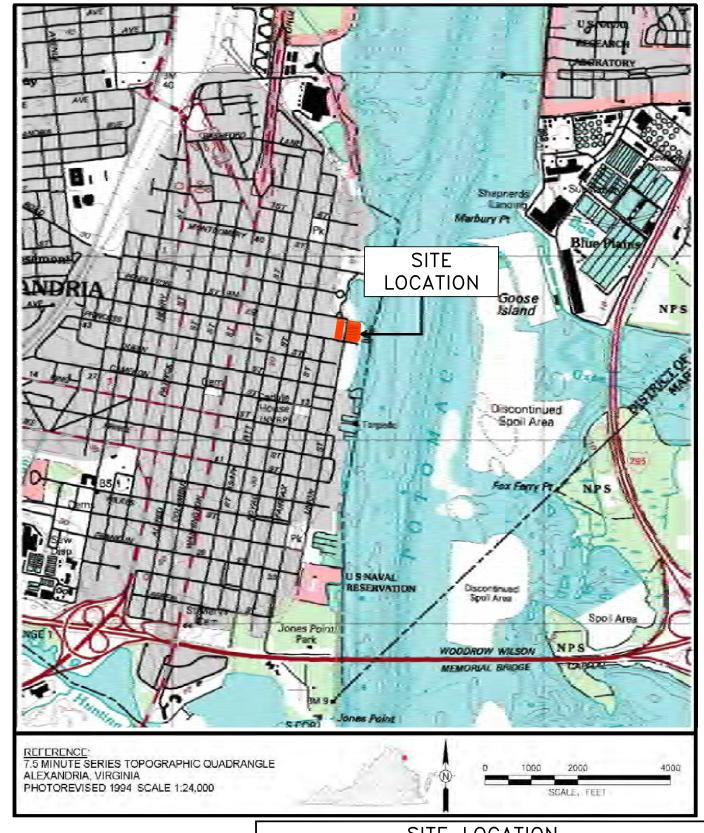
• A construction worker Health and Safety Plan (H&SP) should be developed prior to the start of construction to address health and safety risks posed by the presence of impacted soil and groundwater. The plan should be required reading for all site workers. The H&SP should be prepared by a qualified environmental professional.

Planning and Reporting

- Analytical data collected during the SCS and proposed two additional well sampling events should be used to prepare a quantitative RA, further assess groundwater flow, and model the potential for migration of constituents in groundwater and potential for discharge to surface water. The RA should be prepared using applicable PSTP and VRP guidance and should be the basis for evaluating and selecting applicable engineering and institutional controls. The RA should be prepared by a qualified environmental professional.
- Prior to the start of development, a RAWP should be prepared. The RAWP provides a detailed description of the remedial actions, engineering controls, and institutional controls that will be implemented to address identified impacts and minimize risks to human health and the environment. The RAWP should be prepared by a qualified environmental contractor.

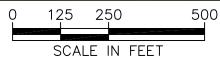
Upon completion of the RA, successful implementation of the recommended construction-related remedial actions, and completion of development incorporating the necessary engineering controls, ICOR believes that conditions at the SITE will meet VRP criteria for issuance of a "Certification of Satisfactory Completion of Remediation" which will be recorded along with the required Declaration of Restrictive Covenants. ICOR also believes that conditions will also meet PSTP criteria for "Case Closure" of PC# 2016-3090.



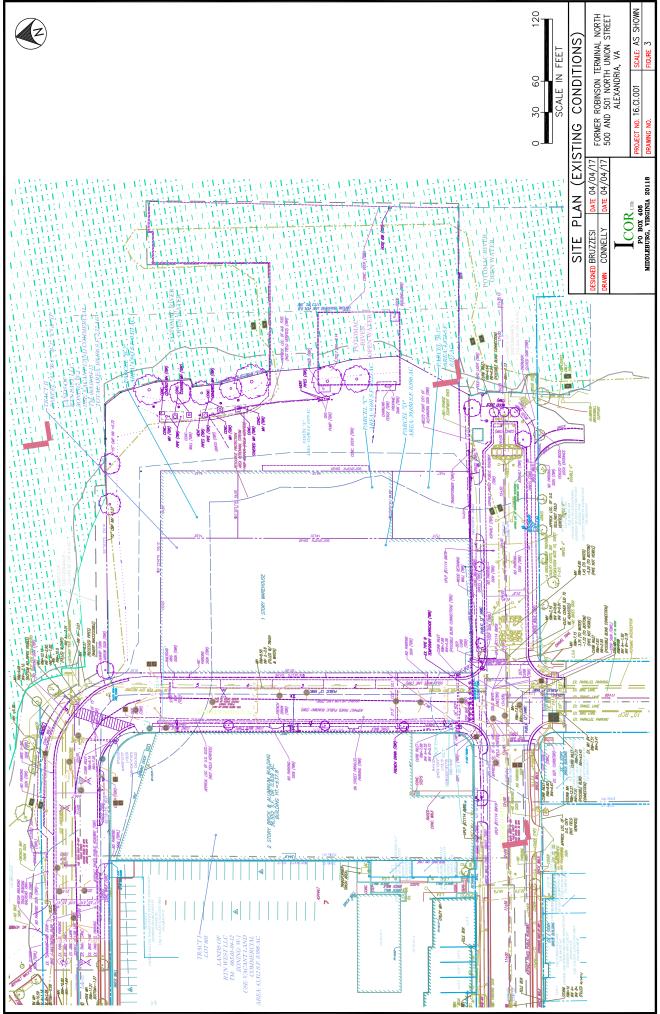


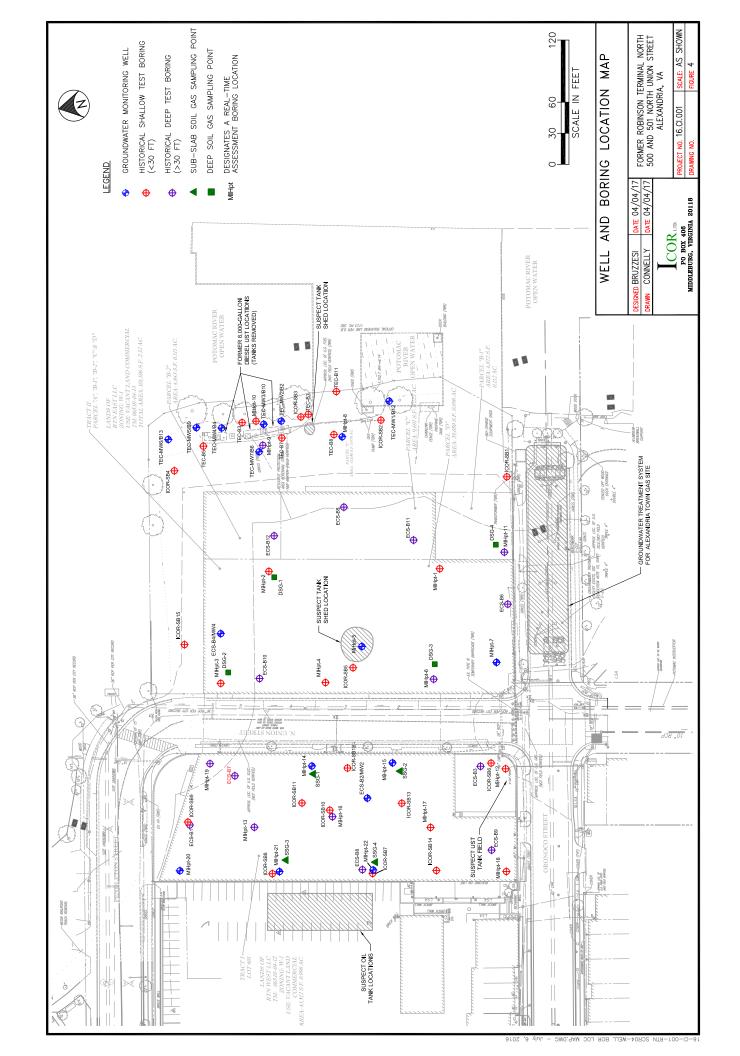
LOCATION SITE **DESIGNED BRUZZESI** DATE 04/04/17 FORMER ROBINSON TERMINAL NORTH CONNELLY DATE 04/04/17 DRAWN 500 AND 501 NORTH UNION STREET ALEXANDRIA, VA LCOR LTD. SCALE: AS SHOWN **PROJECT NO. 16.CI.001** PO BOX 406 MIDDLEBURG, VIRGINIA 20118 DRAWING NO. FIGURE 1

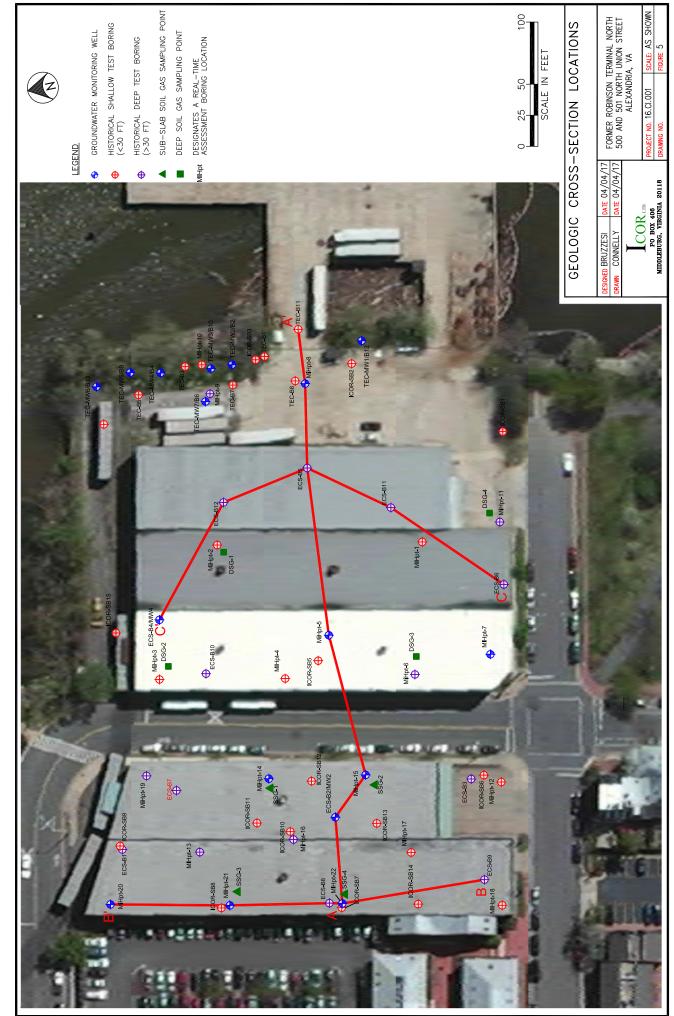
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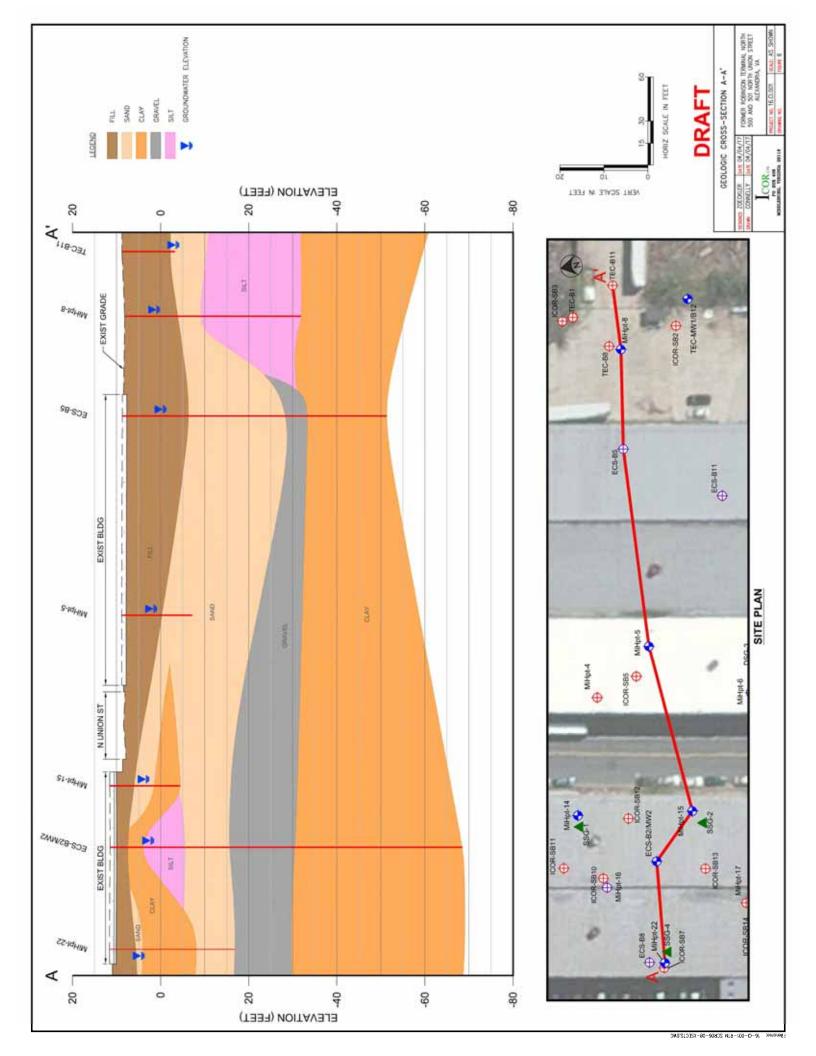


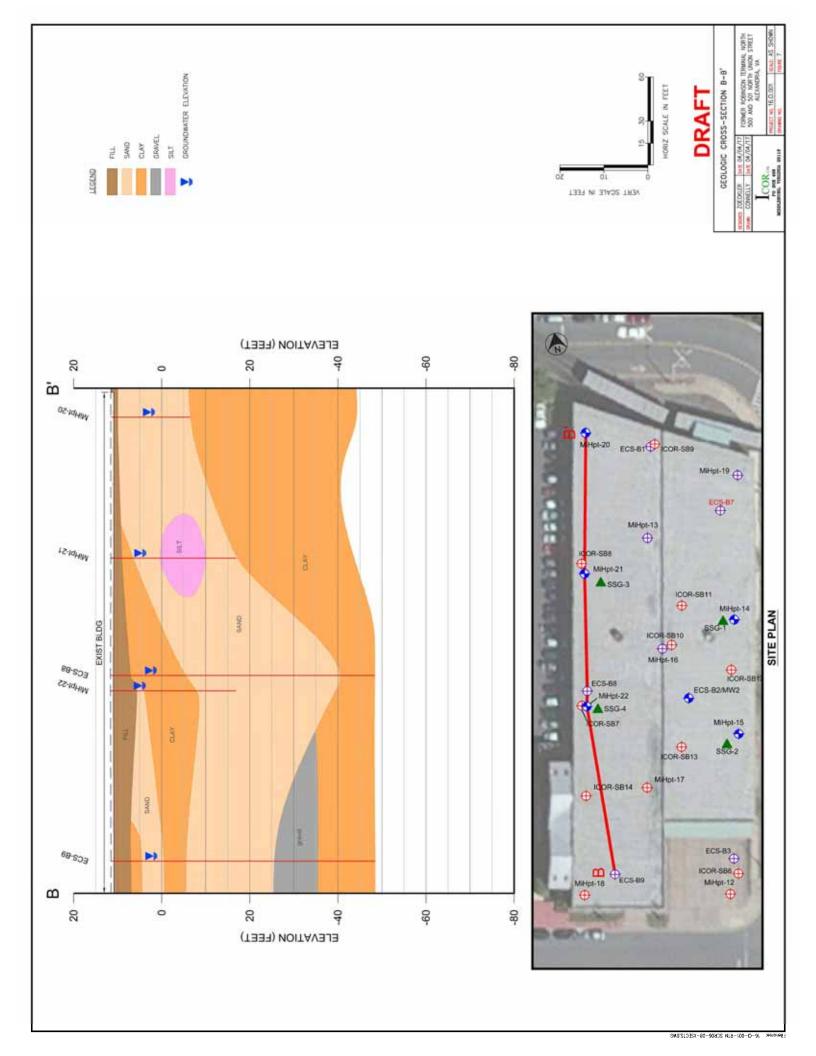
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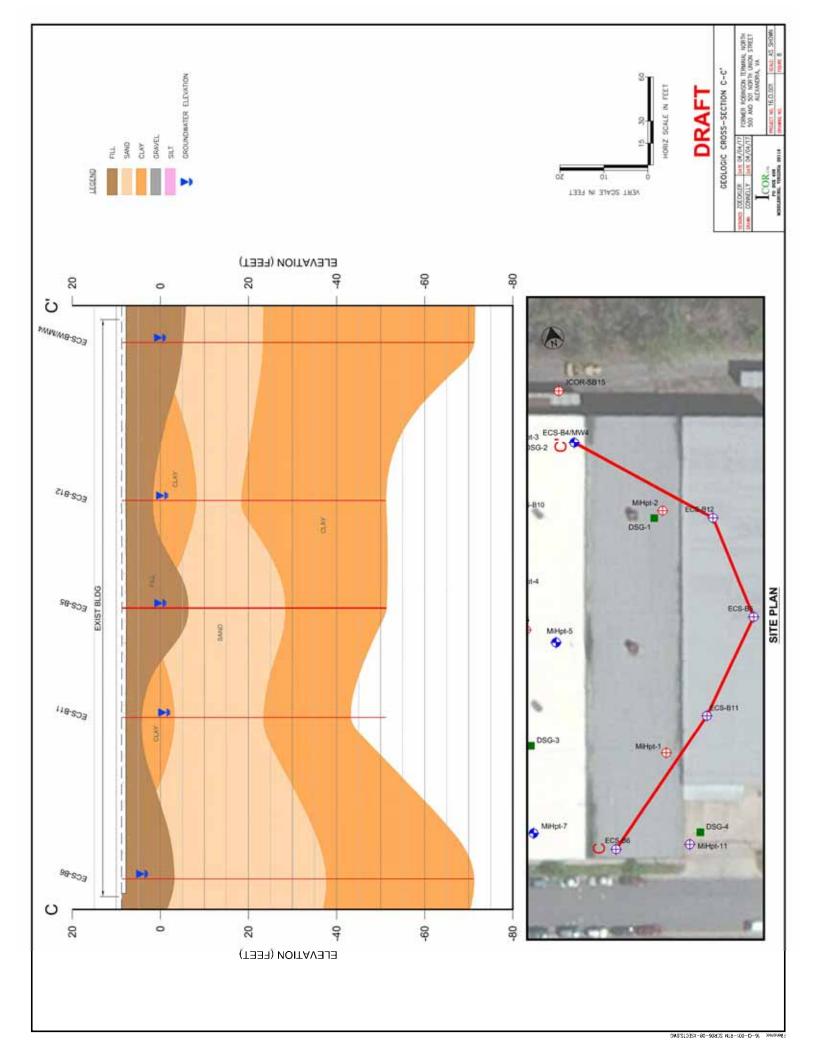


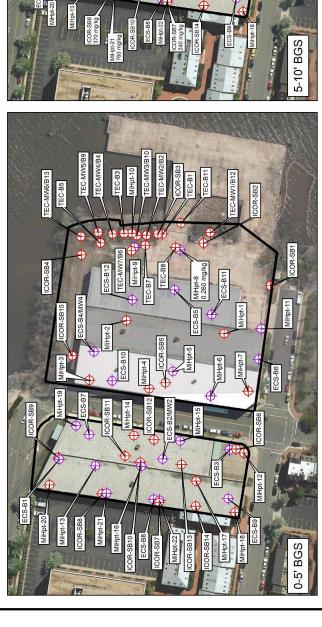


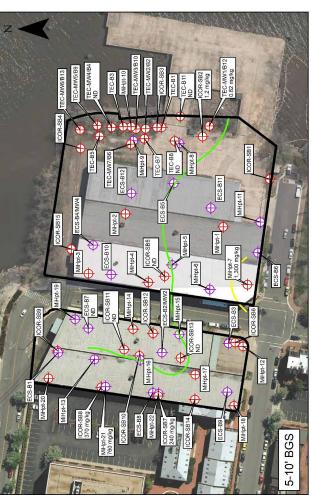


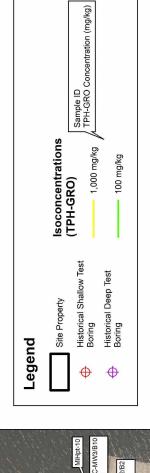










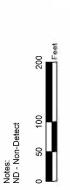


TEC-MW4/B4

MiHpt-13 ICOR-SB8 MiHpt-21 ICOR-SB11

TEC-B3 ND

TEC-MW6/B13 ND TEC-MW5/B9 0.62 mg/kg

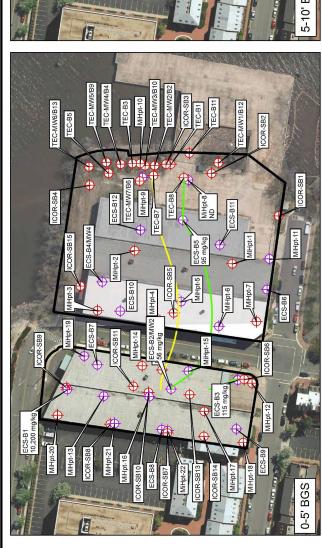


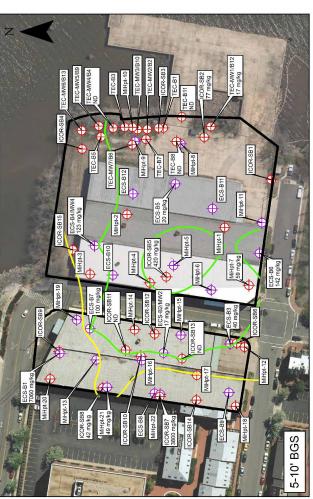
TEC-B1 ND TEC-B11 ND

HISTORIC TPH-GRO IN SOIL ISOCONCENTRATION MAP DESIGNED BRUZZESI | DATE 04/04/17 | FODUMED PROPINSON TEDMINA

DRAWN	CONNELLY	DRAWN CONNELLY DATE 04/04/17	FORMER ROBINSON TERMINAL NORTH 500 AND 501 NORTH UNION STREET ALEXANDRIA VA	ERMINAL NORTH I UNION STREET A VA
	COR		ALL AND IN	n, 10
	Po Box 406	. IID.	PROJECT NO. 16.CI.001	SCALE: AS SHOWN
M	MIDDLEBURG, VIRGINIA 20118	INIA 20118	DRAWING NO.	FIGURE 9

10-15' BGS







TEC-MW6/B13 19 mg/kg TEC-MW5/B9 17 mg/kg

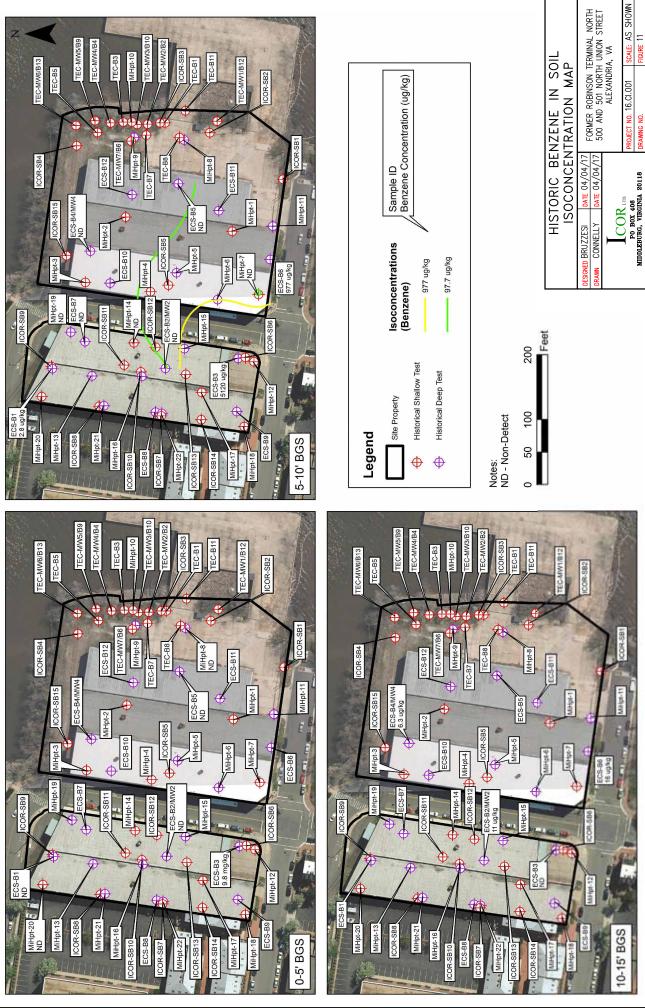
TEC-B5

TEC-B3



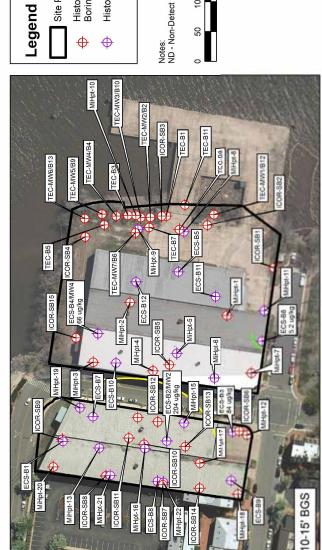
HISTORIC TPH-DRO IN SOIL ISOCONCENTRATION MAP BESIGNED BRUZZESI | DATE 04/04/17 | FORMEP RORINSON TERMIN

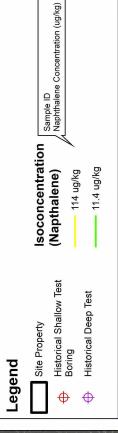
	,		
DRAWN CONNELL	CONNELLY DATE 04/04/17	500 AND 501 NORTH UNION STREET	UNION STREET
1	COR	ALEXANDRIA	A, VA
] a	PO BOX 406	PROJECT NO. 16.CI.001	SCALE: AS SHOWN
MIDDLEBURG,	MIDDLEBURG, VIRGINIA 20118	DRAWING NO.	FIGURE 10

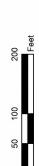






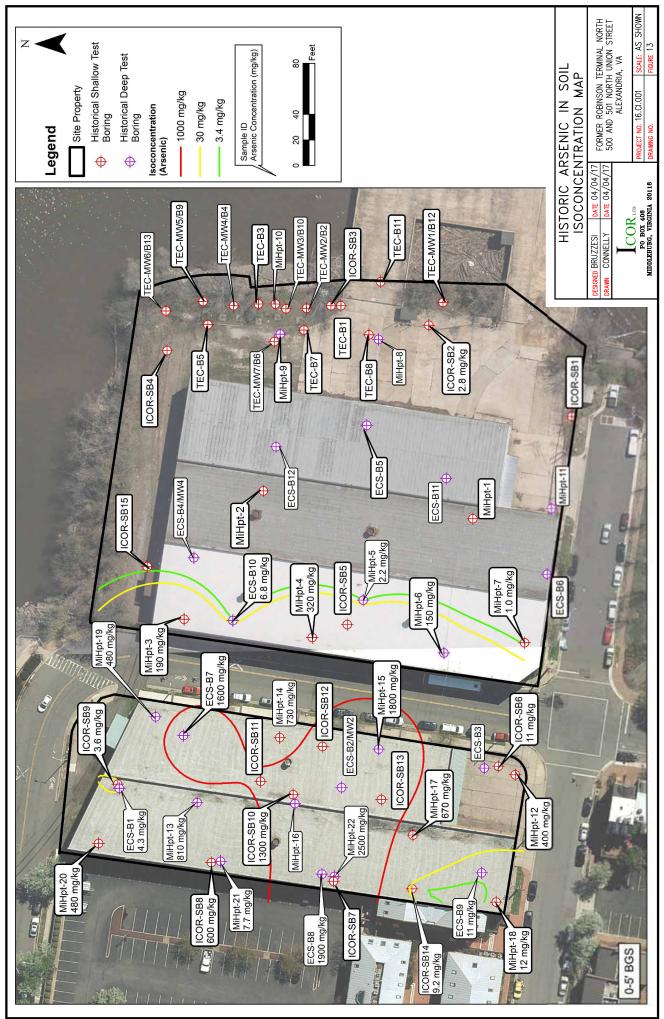


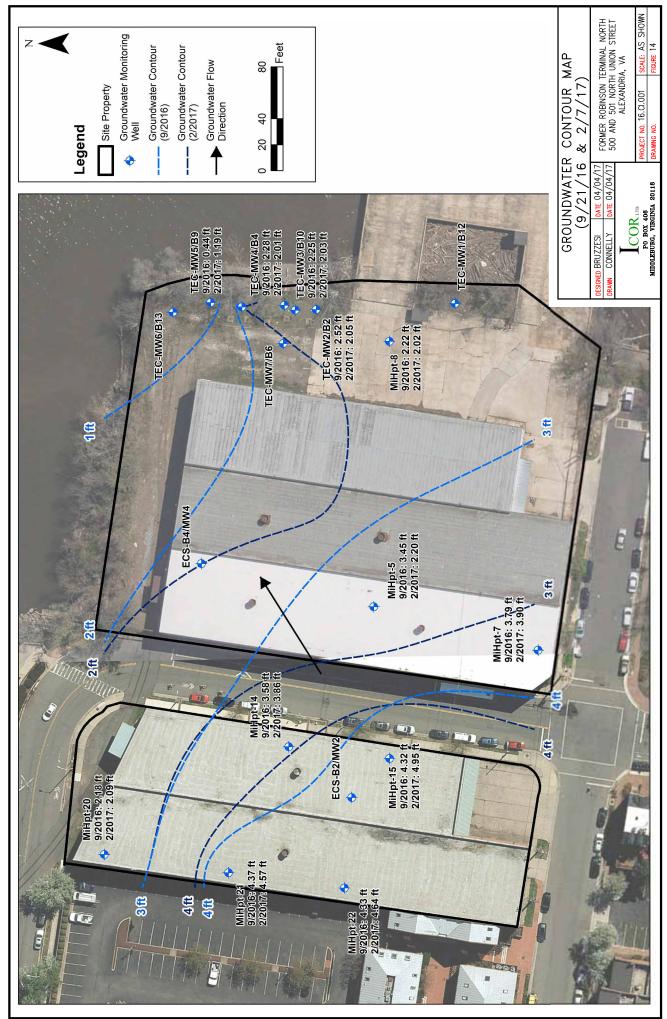


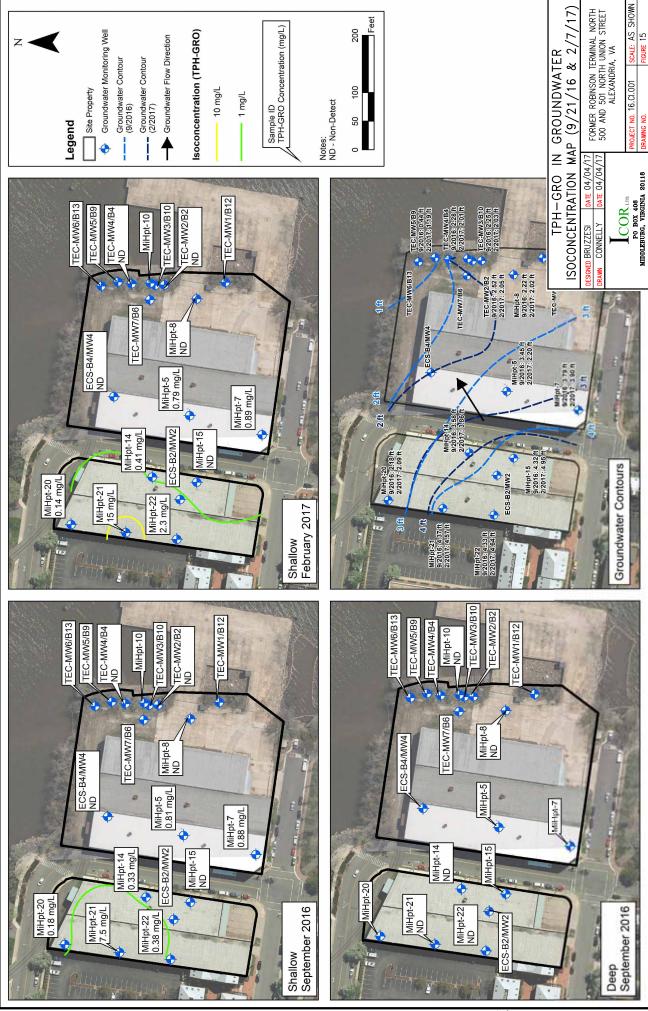


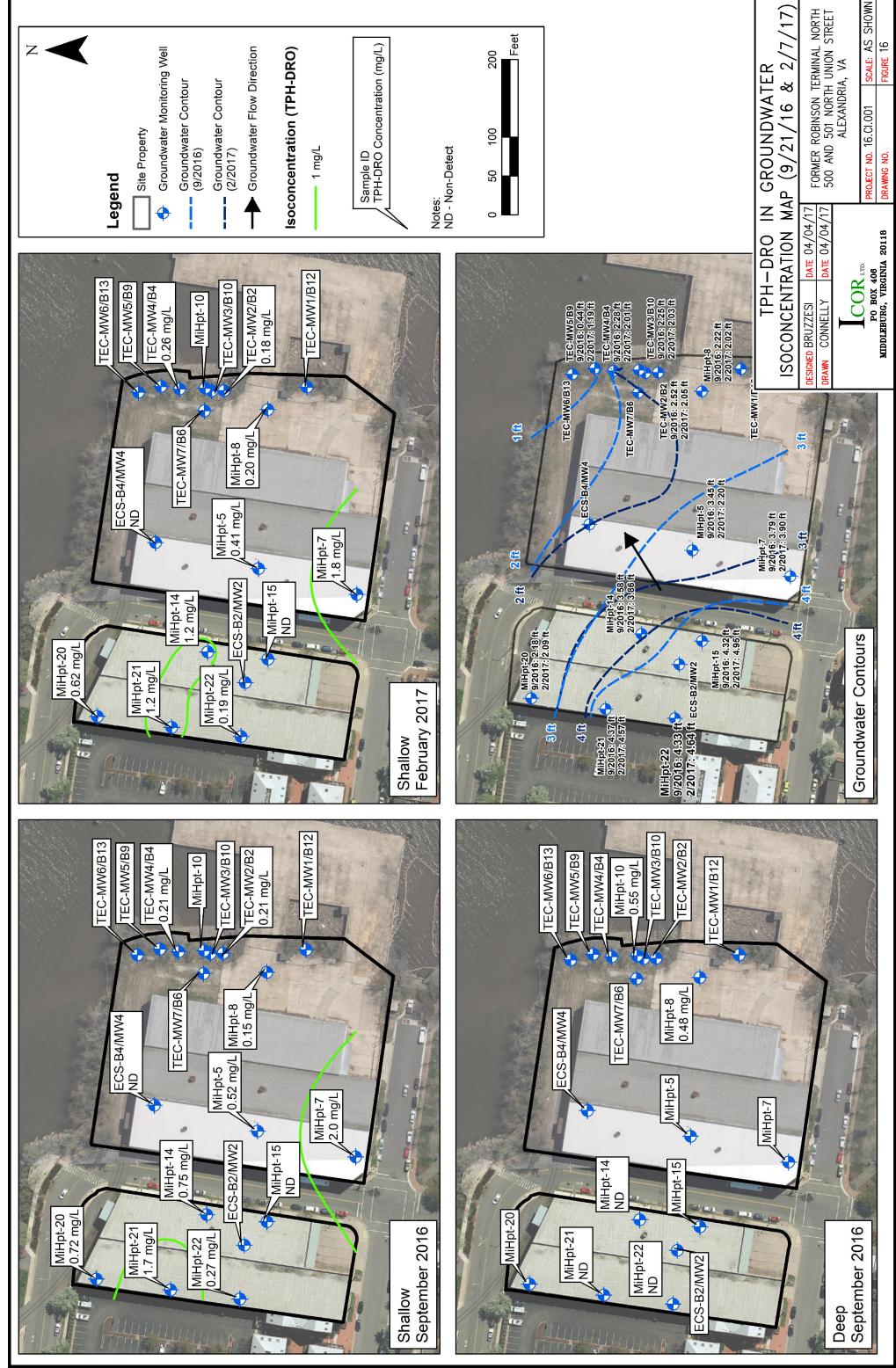
HISTORIC NAPHTHALENE IN SOIL ISOCONCENTRATION MAP SISONED BRUZZESI | DATE 04/04/17 | FORMER RORINSON TERMINAL

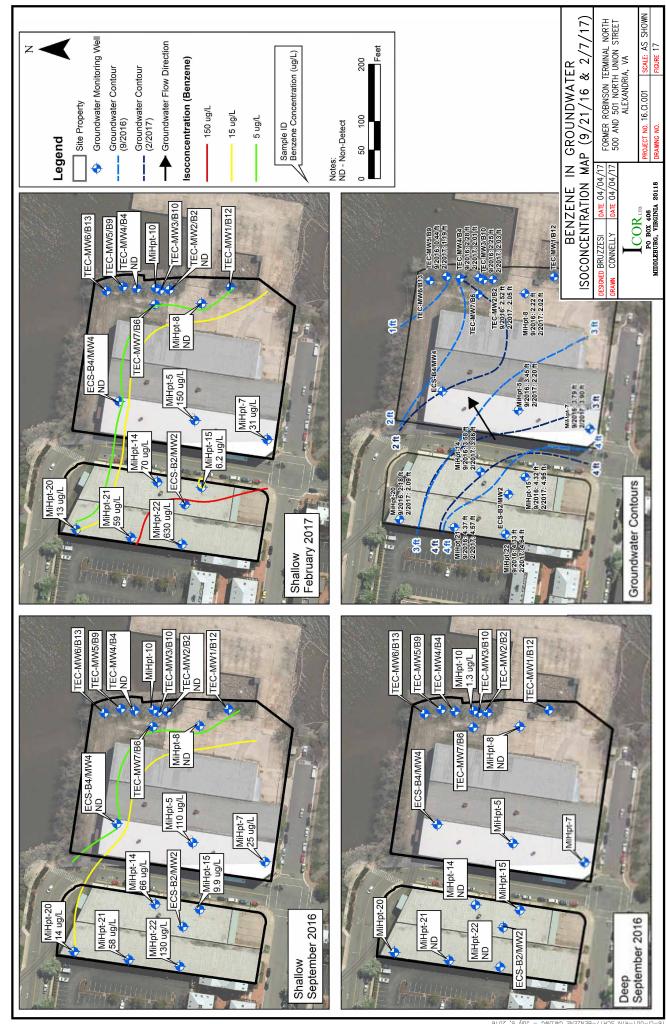
DRAWN	CONNELLY	DRAWN CONNELLY DATE 04/04/17	500 AND 501 NORTH LINION STREET	LINION STREET
	_		ALEXANDRIA, VA	A, VA
	COR			
	PO BOX 408	. LTD.	PROJECT NO. 16.CI.001	SCALE: AS SHOWN
24	MIDDLEBURG, VIRGINIA 20118	INIA 20118	DRAWING NO.	FIGURE 12

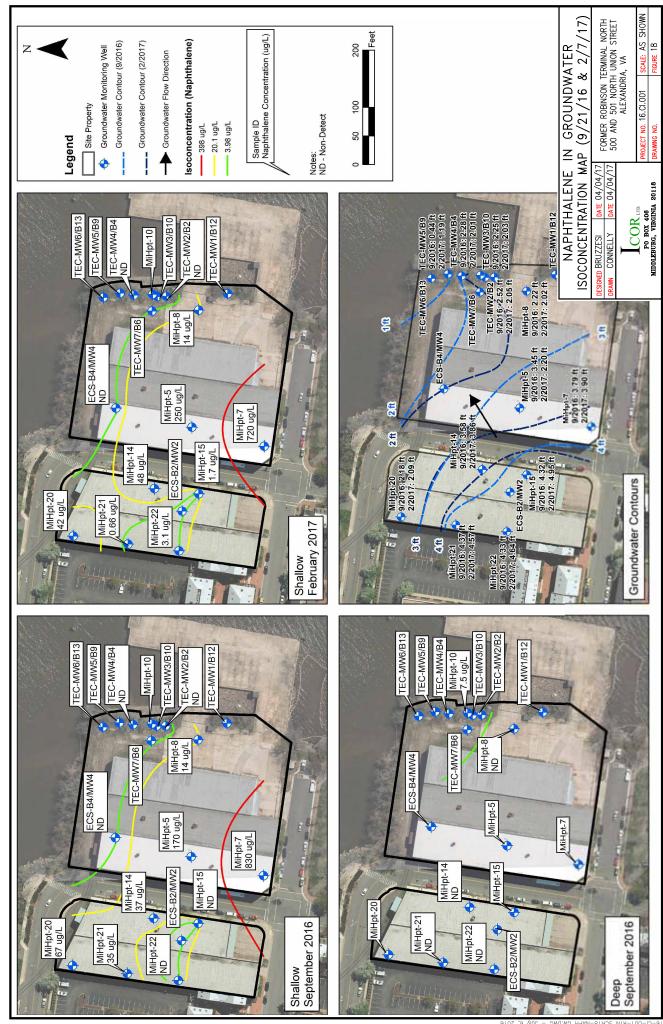


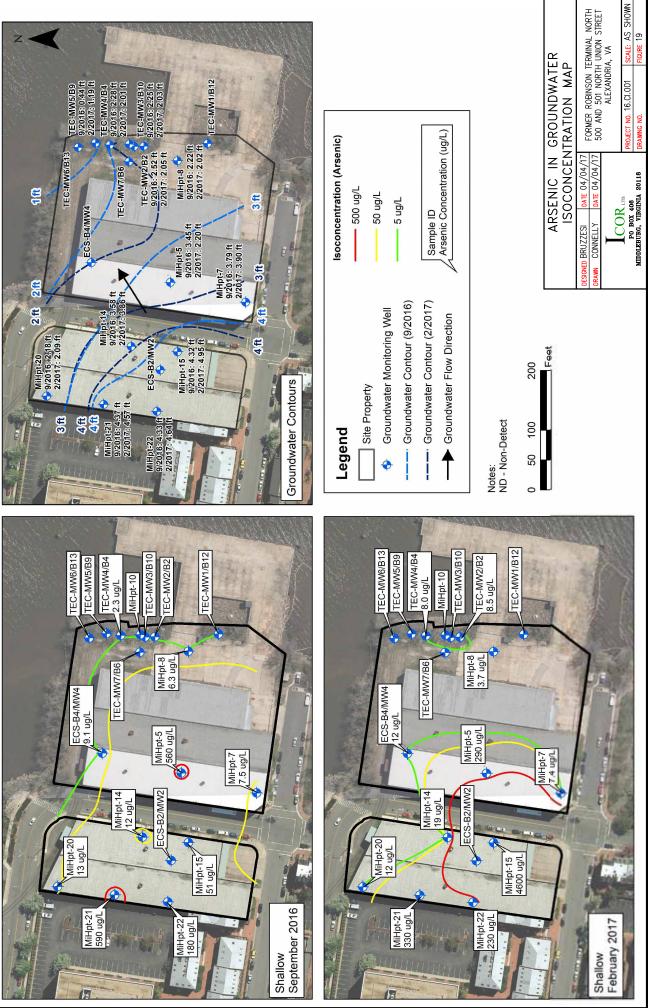


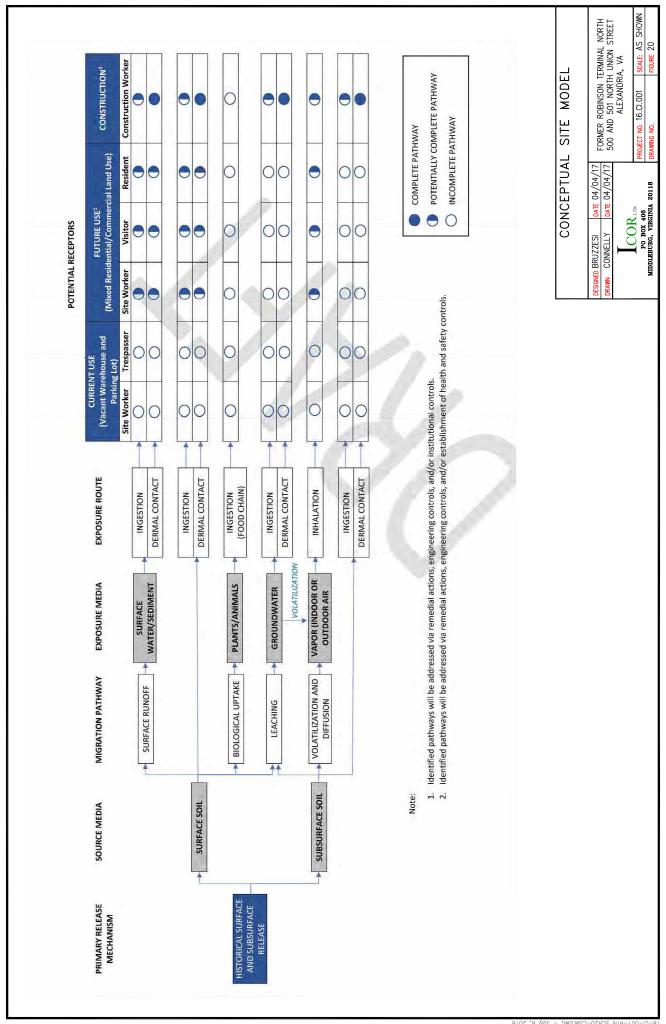












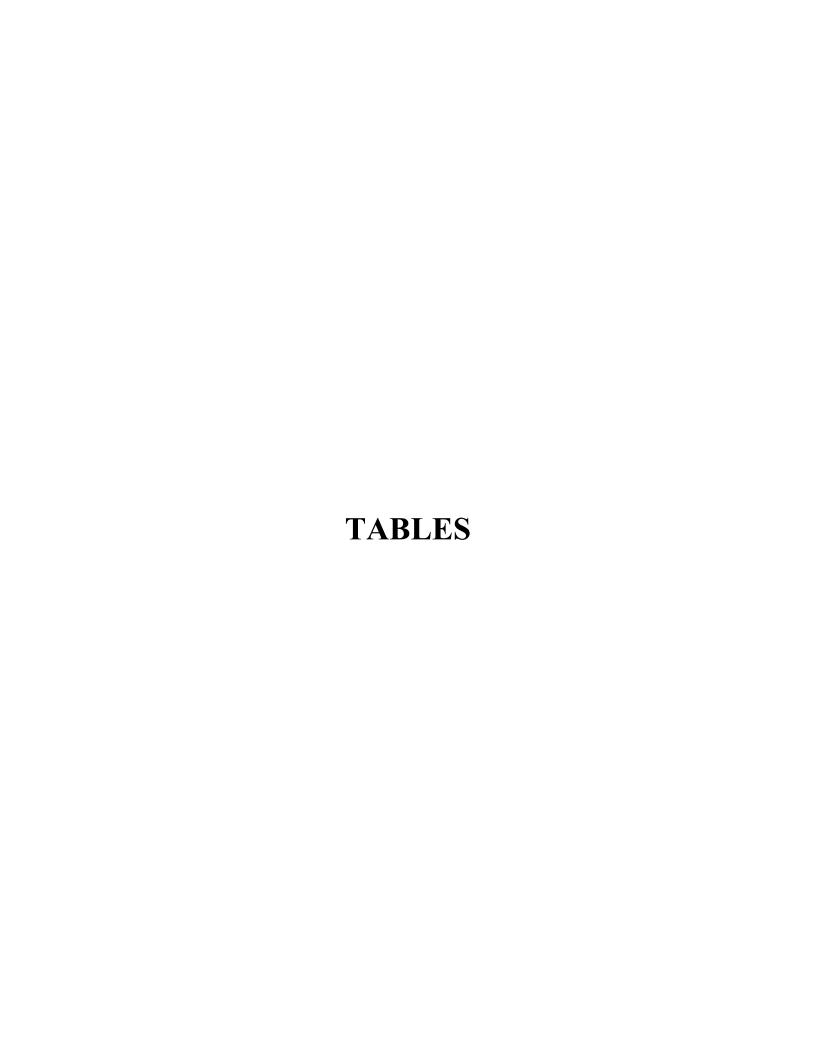


TABLE 1. TEST BORING SUMMARY
FORMER ROBINSON TERMINAL NORTH
500 AND 501 NORTH UNION STREET
ALEXANDRIA, VA

	>					,	1								_						1	1												
	Soil Gas Laboratory Analysis	NA	¥			øN.	VA.	Ş				NA	NA	NA	NA	NA		NA		NA	NA	NA	ΑN		NA			NA			NA			
ormation	Depth of Soil S Gas Sampling A (feet bgs)	NA	¥Z.			VIV	Y V	£				NA	NA	NA	NA	ΑĀ		NA		NA	NA	NA	NA		NA			NA			A A			
Soil Gas Information	Date Collected	NA	\$			VIV	VIV	ş				Y.	NA	VA.	NA	Ą		ΝΑ		NA	NA	NA	NA	:	NA			NA			ΑN			
	Groundwater Sample Laboratory Analyses			TPH-DRO, BTEX, NAP,	TPH-GRO, TPH-DRO,	VOCs, NAP	Т		TPH-DRO, BTEX, NAP, MTBE	TPH-GRO, TPH-DRO,	Total Metals, PEST,				NA	TPH-GRO, TPH-DRO, BTEX, NAP, MTBE	TPH-DRO, BTEX, NAP, MTRF	TPH-GRO, TPH-DRO, BTEX, NAP, MTBE	TPH-DRO, BTEX, NAP, MTBE							TPH-GRO, TPH-DRO, VOCS, SVOCS, PPL Total and Dissolved Metals		NA			TPH-DRO, VOCs, SVOCs, RCRA Total Metale	TPH-GRO, TPH-DRO, VOCs, SVOCs, PPL Total and Dissolved	Metals VOCs, SVOCs, PPL Total Metals, PEST,	PUBS, HEKB
Groundwater Information	Approximate Depth to Groundwater (feet bgs)	UKN		NKN	2.5	N	20	0.7	N N	2.3			6.5	12.0	UKN		UKN	7.0	UKN	NKN	6.5	6.0	8.5		8.5	10.1		14.0			8.5	5.2	5.8	
roundwate	Date Collected	727/06	aU/L/c	30/16	/21/16	Surre	4/2//UG	9001	x/30/16	3/21/16		٧	5/1/06	<	ΑA	5/1/06	/30/16	5/1/06	/30/16	5/1/06	5/1/06	5/1/06	¥.	:	1/4/08	10/8/13		√.			1/4/08	10/8/13	9/21/16	
	Laboratory Soil Sample Sample Depth Laboratory Analysis (feet bgs)	П	DRO	107	100	HODO TEH	Т	DRO ITT	еэ	100		Т	TPH-GRO, TPH- 6	PH-GRO, TPH-	Ī	TPH-GRO, TPH- 5 DRO	100	TPH-GRO, TPH- 5 DRO	2				-		TPH-DRO, VOCs		TPH-DRO, VOCs TPH-DRO, VOCs	Ī	Herbicides	TPH-DRO, VOCs		TPH-DRO, VOCs	TPH-DRO, VOCs	PEST, PCBs, HERB TPH-DRO, VOCs TPH-DRO, VOCs
	Laboratory So Sample Depth La (feet bgs)	11.0 -12.0 TF		i		110 120							11.0 - 12.0 TF	10.0 - 12.0 TF	7.0 - 8.0 TF	12.0 -14.0 TF		11.0 -12.0 TF	1	9.0 - 11.0 TF	7.0 - 8.0 TF	11.0 -12.0 TF	1.0 - 2.5 Re	000	2.5 - 4.0 TF	5.0 - 6.5 Re	8.5 - 10.0 TF	1.0 - 2.5 TF		13.5 - 15.0 TF		13.5 - 15.0 TF	13.5 - 15.0 TF	18.5 - 20.0 PE 23.5 - 25.0 TE 28.5 - 30.0 TE
	ate	4/27/06	90//2/			90/26/4	4/27/08	27/00				/27/06	4/27/06	/27/06	4/27/06	4/27/06		4/27/06		4/27/06	4/27/06	4/27/06	12/19/07		12/20/07			12/26/07			12/27/07			
	Odors Noted PID Reading Date (feet bgs) Range Collected (in ppm)	0.0 - 0.0				00	Ī						0.0 - 0.8	0.0 - 0.0		0.0 - 49.2 4		0.0 - 0.2		0.0 - 0.0	0.0 - 0.0	0.0 - 1.4 4	UKN		UKN 1			UKN 1			UKN			
		ON	2			Ç	Q Q	2				ON	6.6 - 7.6	NO NO	ON	12.0 - 14.0 (petroleum)		ON		ON.	ON.	ON	OKN		UKN			NKN			UKN			
	Staining Observed (feet bgs)	ON .	2			Ç	2 2	2				ON	ON	ON	ON	9		ON.		Q.	ON.	Q.	UKN		UKN			UKN			N C			
Soil	Test Boring Depth (feet bgs)	14.0	14.0			43.0	12.0	0.51				12.0	12.0	12.0	12.0	16.0		12.0		12.0	10.0	10.0	0.09		80.0			80.0			80.0			
	Elevated et ECD Reading (feet bgs)	NA:	ž			VIV.	¥ 12	Š				ΝΑ	ΝA	N.	NA	Š		NA		NA	NA	NA	AN		NA			NA			Ā			
	Indication of Envarae PID Elevated FID Elevated Tost Boring Free Product Reading (feet Reading (feet ECD Reading Depth (feet EGP) bgs) (feet bgs) (feet bgs)	VA.	¥.			MA	Y V	<u> </u>				ΝΑ	Ϋ́	Ϋ́	NA	¥ Z		NA		Ν	NA.	NA	ΑN	<u> </u>	NA			NA			AN			
	of Elevated uct Reading bgs)	NA:	ž			VIV	2 2	Ę				ΑN	ΝΑ	ΑN	NA	¥ Z		NA		NA	NA	NA	NA	<u> </u>	NA			NA			N A			
		VY:	ď			VIV.	Y V	Š				Ą	ΑN	AN	NA	¥ Z		NA		NA	NA	NA A	Ą		NA			NA			A			
ar.	Depth ed Advanced (feet bgs)	V.	¥.			VIV.	¥ 5	ş				ž	Ϋ́	¥N.	NA	¥.		NA		NA	Ϋ́	NA	Ą		NA			NA			NA			
	Date Advanced	NA:	Š			VIV	Y VI	£				ΝA	ΝΑ	ΑN	NA	¥		N.		Ϋ́	Ϋ́	NA	W		NA			NA			₹ X			
	Depth Investigated (feet bgs)	14.0	0.4.0			120	12.0	0.71				12.0	12.0	12:0	12.0	16.0		12.0		12.0	10.0	14.0	90.0		80:0			0.08			80.0			
Date	Advanced	4/27/06	4/2//06			307707	4/27/06	917716				4/27/06	4/27/06	4/27/06	4/27/06	4/27/06		4/27/06		4/27/06	4/27/06	4/27/06	12/19/07		12/20/07			12/26/07			12/27/07			
Test Boring ID			IEC-BZ/MWZ				TEC-B3						TEC-B6/MW7	TEC-B7	TEC-B8	TEC-B9/MW5		TEC-B10/MW3		TEC-811	TEC-B12/MW1	TEC-B13/MW6	ECS-B1		ECS-B2/MW2			ECS-B3			ECS-B4/MW4			

TABLE 1. TEST BORING SUMMARY
FORMER ROBINSON TERMINAL NORTH
500 AND 501 NORTH UNION STREET
ALEXANDRIA, VA

	5		I										_					
	Soil Gas Laborator, Analysis	NA	A A	AN.	¥.	Ϋ́	NA	AN.	NA A	۷.	AN.	NA A	ΨN	¥	NA	Ψ.V	NA	
ormation	Depth of Soil (Gest bgs)	NA NA	e v	NA NA	Ā	AN	NA	NA NA	NA V	ΑΝ	NA NA	₹Z	NA	NA	NA	∀	NA	
Soil Gas Info	Date Depth of S	AN.	NA NA	NA	NA	₽.	NA	NA A	§.	NA	NA NA	ev.	NA	NA NA	NA	YA Y	NA	
	Groundwater Sample Laboratory Analyses	NA	NA	TPH-GRO, TPH-DRO, VOCs, SVOCs, PPL Total and Dissolved Metals	NA	NA	NA	TPH-GRO, TPH-DRO, VOCs, SVOCs, PPL Total and Dissolved Metals	TPH-GRO, TPH-DRO, VOCs, SVOCs, PPL Total and Dissolved Metals	TPH-GRO, TPH-DRO, VOCs, SVOCs, PPL Total and Dissolved Metals	TPH-GRO, TPH-DRO, VOCs, SVOCs	TPH-GRO, TPH-DRO, VOCs, SVOCs, PPL Total and Dissolved Metals	NA	NA	NA	NA	NA	
Groundwater Information	Approximate Depth to Groundwater (feet bgs)	8.5	5.0	5.4	6.0	10.0	9.0	6.6	10.5	8.0	8.1	10.1	52	9.1	10.0	9.0	9.5	
roundwater	Date Collected	Y!	Ψ.	10/8/13	₹.	NA	4	10/8/13	10/8/13	10/8/13	10/8/13	10/8/13	NA		NA	۷.	V)	
9	Sis	N RCRA Total Metals TPH-DRO, VOCs TPH-DRO, VOCS	m m				_	TPH-GRO, TPH- DRO, TCL VOCs, TCL SVOCs, PPL Total Metals		TPH-GRO, TPH- DRO, TCL VOCs, TCL SVOCs, PPL Total Metals	PPL Metals 10 TPH-GRO, TPH- DRO, TCL VOCs, TCL SVOCs		PPL Total Metals	ocs,		TPH-GRO, TPH- DRO, PPL Total Metals, Chromium VI	RCRA Total and N.	TCLP Metals PPL Total Metals, PEST, PCBs, HERB TPH-GRO, TPH-
		2.5 - 4.0 5.0 - 6.5 8.5 - 10.0 78 - 28.5 - 30.0 73.5 - 35.0			3.0 - 4.0 5.0 - 6.0 TI	TO.5 - 11.5		6.0 - 7.0 D D T	2:0-3:0	7.5-8.5 D T T	2.0 - 3.0 5.0 - 6.0 TI	4.0 - 5.0 4.5 - 5.5	20-30 P			5.5 - 6.5 D	2.5 - 10.0 R	1.0 - 2.0 PI
	Date Collected	1/2/08	12/28/07	AN A	10/8/13	9/7/16	NA	10/8/13	10/8/13	10/8/13	10/8/13	9/7/16	10/8/13	10/8/13	10/8/13	10/8/13	10/7/14	9/7/16
	PID Reading Range (in ppm)	UKN	nKN OKN	0.0 - 0.0	0.0 - 25.4	0.0 - 4.0	0.0 - 0.0	0.0 - 0.0	0.0 - 8.2	0.0 - 163.0	46.1 - >451.0	0.0 - 2.8	00-00	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	UKN	
	Odors Noted (feet bgs)	UKN	OKN	O _N	3.0 - 10.0 (oil and gasoline)	10.0 - 12.0 (oil)			12.0 - 15.0 (oil)	5.0 - 15.0 (oil from 5.0 - 7.0 and oil and gasoline from 7.0 -15.0)	1.0 - 15.0 (oil and gasoline)	2.0 - 6.0 (oil)	S				2.5 - 7.0	(gasoline)
	Staining Observed (feet bgs)	UKN	UKN	Q	9	10.0 - 12.0 (oil)	Q.	O _N	Q Z	O _N	Q N	Q Z	S.	<u>Q</u>	ON	9	ON ON	
Soil	Test Boring Depth (feet bgs)	0.09	0.08	13.5	15.0	15.0	10.0	15.0	15.0	15.0	15.0	17.0	15.0	15.0	15.0	15.0	0.09	
	D Elevated Test Boring et ECD Reading Depth (feet bgs) bgs)	¥.	Ą	¥.	NA A	Ā	NA	δ _X	Ϋ́	AN	¥.	₹.	AN	¥	NA	Ā	ΝΑ	
	Elevated FI Reading (fe bgs)	ΨN	ž	NA A	Ψ.	¥	NA	ĕ	₹ Z	NA	∀ Z	§.	AN	AN A	NA	₹ Z	NA	
	Indication of Elevated PID Elevated FID Free Product Reading (feet Reading (feet Bgs) bgs)	¥.	4	¥.	Ą	4	Y/	Y.	4	Ψ.	Y.	4	Ą	Ą	NA	≰	N.	
	lication of I	_	_	-	-	_	_		_					_				
	Depth Ind Advanced Fre (feet bgs)	AN.	¥.	N	AN	Ψ.	NA	Ϋ́ V	₹ Z	N	₹ Z	¥.	AN	AN	NA	ž	AN	
lime		¥	<u>\$</u>	NA A	N A	ž	ΑN	¥.	ž	<u>N</u>	Š.	ž	Ą		NA	¥	Ν	
	Date Advanced	Y Y	ž	A A	A A	₹	NA	¥ V	<u></u>	NA	₹ Z	ž	ΨN	A A	NA	¥ Z	AA	
	Depth Investigated (feet bgs)	0.08	0.08	13.5	15.0	15.0	10.0	15.0	15.0	15.0	15.0	17.0	15.0	15.0	15.0	15.0	0.09	
	Advanced	1/2/08	12/28/07	10/8/13	10/8/13	10/8/13 9/7/16	10/8/13	10/8/13	10/8/13	10/8/13	10/8/13	9/7/16	10/8/13	10/8/13	10/8/13	10/8/13	10/7/14	9/7/16
Test Boring ID		ECS-B5	ECS-B6	ICOR-SB1	ICOR-SB2		ICOR-SB4	ICOR-SB5	ICOR-SB6	ICOR-SB7	ICOR-SB8	ICOR-SB9		DSG4	ICOR-SB12	ICOR-SB13	ECS-87	

TABLE 1. TEST BORING SUMMARY
FORMER ROBINSON TERMINAL NORTH
500 AND 501 NORTH UNION STREET
ALEXANDRIA, VA

oratory		I																										
Soil Gas Laboratory Analysis	NA	VIV	Y Y	NA	ΑN	AN.	200	3	NA	AN	vocs	AN		VA V		NA	AN	vocs	ΨN	NA	VOCs		VOCs	NA	NA	NA	NA	NA A
Ormation Depth of Soil S Gas Sampling (feet bgs)	NA A	VIV	Y V	NA	NA	NA	60-0.3	0.0 - 0.0	NA	¥.	3.5 - 4.0	A N		AN.		NA	NA A	2.0 - 2.5	NA	NA	Sub-Slab		Sub-Slab	NA	NA	NA	NA	AN A
Soil Gas Inf Date Collected	NA	VIV	Y Y	NA	NA	NA	12/5/16	123110	NA	AN.	12/5/16	NA NA		NA A		NA	NA	12/5/16	NA	NA	12/5/16		12/5/16	¥	NA	NA	NA	AN A
Groundwater Sample Laboratory Analyses	NA	NA NA	N A	NA	NA	NA	NA NA	WW	NA	TPH-GRO, TPH-DRO, VOCs, SVOCs, PPL Total Metals, PEST, PCBs, HERB	NA	TPH-GRO, TPH-DRO, VOCs, SVOCs, PPL Total Metals, PEST, PCBs, HERB		TPH-GRO, TPH-DRO, VOCs, SVOCs, OG+TPH	TPH-GRO, TPH-DRO, VOCs, SVOCs, PPL Total Metals, PEST, PCBs, HERB	NA	TPH-GRO, TPH-DRO, VOCs, SVOCs	NA	NA		TPH-GRO, TPH-DRO, VOCS, SVOCS, OG+TPH	TPH-GRO, TPH-DRO, VOCs, SVOCs, PPL Total Metals, PEST, PCRs, HFRR	TPH-GRO, TPH-DRO, VOCs, SVOCs, PPL Total Metals, PEST, PCBs, HERB	NA	NA	NA		TPH-GRO, TPH-DRO, VOCS, SVOCS, PPL Total Metals, PEST, PCBs, HERB
Approximate Approximate Depth to Groundwater (feet bgs)	0.6	90	7.5	9.5	9.5	UKN	OKN.	Š	UKN	3.5	NA	3.8		26.5 - 40.0 (Deep)	2.2	NA	25.0 - 28.5 (Deep)	NA	NA		25.0 - 28.5 (Deep)	3.6	4.3	NA N	NA A	NA		2.2
Groundwate Date Collected	4A		< <	V	NA	۷.	NA NA		NA	9/21/16	¥	9/21/16		9/9/16	9/21/16	4	9/6/16	¥	NA		3/8/16	3/21/16	3/21/16	¥.	AA	¥		9/21/16
oil Sample aboratory Analysis	pue	TCLP Metals	RCRA Total Metals	CRA Total Metals N	CRA Total Metals N	NA.	NA Total Matale	wardin	il Metals		PPL Total Metals N		PH-GRO, TPH- RO, VOCs, NAP	TPH-GRO, TPH- 9 DRO, VOCs, NAP	TPH-GRO, TPH- DRO, VOCs, SVOCs	NA	TPH-GRO, TPH- DRO, VOCs, SVOCs		Total AS	PL Total Metals	Metals, CBs, HERB,	Total AS VOCS, NAP TPH-GRO, TPH-		PEST, PCBs, HERB, N Dioxin PEST, PCBs, HERB	Metals	Total AS	Total AS, Dioxin	. Bg
Laboratory Sample Depth L (feet bgs)	2.5 - 4.0 F	26 40.0	4.0 - 10.0		5.0 - 10.0 F		10 00 0	Ĺ	1.0 - 2.0 F		1.0 - 2.0		7.0 - 8.0	4.0 - 5.0	37.8 - 38.8	NA T	24.5 - 25.5	NA 1	1.0 - 2.0	1.0 - 2.0 4.0 - 5.0		4.0 - 5.0 5.0 - 6.0 25.0 - 26.0		1.0 - 2.0	Ī	1.0 - 2.0	1.0 - 2.0	
Date	10/6/14	10/2/44	10/7/14	10/9/14	10/8/14	NA:	NA OIG16	310/10	9/6/16	9/7/16	9/6/16	9/6/16		9/6/16		NA	9/6/16	NA	9/7/16	9/7/16	9/8/16		9/8/16	9/8/16	9/7/16	9/7/16	9/7/16	9/8/16
PID Reading Range (in ppm)	UKN	IKN	KN	UKN	UKN	NA:	0000	0.0 - 0.0	0:0 - 0:0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0		0.0 - 0.0		NA	Ψ.	ΝA	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0		0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.4	0.0 - 0.0
Odors Noted (feet bgs)	ON	ON				NA		2	ON	O _N	ON	5.0 - 8.0 (petro) 10.0 - 12.5	(swamp)		(creosote)	NA	ON		ON	4.0 - 5.0 (chemical)	O Z		O2	O _N	ON.	ON	1.0 - 5.0 (chemical)	13.5 - 15.0 (chemical)
Staining Observed (feet bgs)	ON ON	ON	2 9	ON	NO	NA	NON	2	ON	O _N	NO	O _N		ON.		ΝΑ	ON	NA	ON	ON	ON.		Q N	ON	ON	ON	ON.	O _N
soil est Boring Jepth (feet gs)	60.0	0.0	0.0	0.0	30.0	.tA	NA 5.0	2	5.0	16.0	5.0	17.0		40.0		NA	23.0 - 28.0 (discrete)	₩.	0.2	5.0	28.5		16.0	15.0	5.0	5.0	5.0	18.0
Elevated 1 ECD Reading I	NA		. 4			ON S			ON	ON C	ON ON	ON				ON	9		NO NO	0-22.0	4.0 - 9.0		3.0 - 25.0	ON	ON	ON	ON ON	ON P
ing (fee		VIZ.									4.5 - 14.8 N	6.5 - 9.0 and N		4.0 - 5.0, 7.0 - NO 7.25, 14.0 - 17.0, and 22.0		20.5 - 35.0 N	10.5 - 11.5 N and 23.0 -			3.0 - 14.0	10.0 - 16.0 4.					- 23.5		
ated PID Eleva ding (feet Read) bgs)	NA A	VIV	Y Y	AN	AN	9	200	2	ON	<u>S</u>	14	-9.0 6.5		0.4 2.7 7.1 4.		20	10 ans	S	ON.	3.0	10		<u>0</u>	ON.	ON.	23.0	ON	O _Z
Indication of Elevated PID Free Product Reading (feet bgs)	NA	VIV	S S	NA	NA	9	2 2	2	ON	O _Z	ON	6.5		O N		ON.	ON	ON.	ON.	ON	O _N		O Z	O _N	ON.	ON	ON.	<u>Q</u>
	N.					2			ON	ON.	ON	ON.		<u>Q</u>		Q.	ON.		9	O _N	O _N		Q Q	O _N	ON.	ON.	<u>Q</u>	9
Depth ced Advanced (feet bgs)	NA NA	VIV	ž			3 25.00			3 24.95	3 28.25	30.35	25.70		\$ 50.05		3 44.90	3 25.95		21.95	34.00	25.10		32.05	30.05	26.05	24.10	33.90	13.05
Real-Time Date Sd Advanced	NA A	VIV	Ş Ş	NA	NA	6/23/16	6/23/16	01/07/10	6/23/16	6/23/16	6/23/16	6/23/16		6/24/16		6/24/16	6/24/16	7/5/16	7/6/16	7/6/16	7/6/16		7/7/16	7/7/16	7/7/16	7/7/16	7/7/16	7/7/16
Maximum Depth Investigated (feet bgs)	0.09	000	0.09	0.09	0.09	25.00	25.00	20.12	24.95	28.25	30.35	25.70		50.05		44.90	25.95	49.95	21.95	34.00	25.10		32.05	30.05	26.05	24.10	33.90	13.05
Date Advanced	10/6/14	10/2/44	10/7/14	10/9/14	10/8/14	6/23/16	6/23/16	9/6/16	6/23/16	6/23/16 9/7/16	6/23/16	6/23/16 9/6/16		6/24/16 9/6/16		6/24/16	6/24/16 9/6/16	7/5/16	7/6/16	7/6/16	7/6/16 9/8/16		9/8/16	9/8/16	7/7/16	7/7/16	9/7/16	9/8/16
Test Boring ID	ECS-B8	ECC.BO	ECS-810	ECS-B11	ECS-B12	MiHpt-1	MHDI-Z/DSG-1	MINITAL SOCIAL S	MiHpt-4	MiHpt-5	MiHpt-6/DSG-3	MiHpt-7		MiHpt-8		MiHpt-9 (TEC- B6/MW7)	MiHpt-10 (TEC- B10/MW3)	MiHpt-11/DSG-4	MiHpt-12	MiHpt-13	MiHpt-14		MiHpt-15	Milhpt-16 (ECS- BZNW2, ICOR- SB10)	MiHpt-17	MiHpt-18	MiHpt-19	MiHpt-20

TABLE 1. TEST BORING SUMMARY
FORMER ROBINSON TERMINAL NORTH
500 AND 501 NORTH UNION STREET
ALEXANDRIA, VA

Advanced	Depth	Date	Denth	A				Г	Γ											
	igated J	Advanced	ced gs)	Indication of Elevated Free Product Reading bgs)		Elevated FII t Reading (fe bgs)	PID Elevated FID Elevated Test Boring (feet Reading (feet ECD Reading Depth (feet bgs) bgs)		Observed (feet bgs)	(feet bgs)	(feet bgs) Range Colle	Date	Laboratory Sample Depth (feet bgs)	Laboratory Soil Sample Date Sample Depth Laboratory Analysis Collected (feet bgs)	Date s Collected	Approximate Depth to Groundwater	Groundwater Sample Laboratory Analyses	Date Collected	Depth of Soil Gas Sampling (feet bgs)	Depth of Soil Soil Gas Laboratory Gas Sampling Analysis (feet bgs)
																(feet bgs)				
pt-21 (ICOR- 7/7/16 3	32.30	31/1/16	32.30 N	NO N	7.0 - 11.0	7.0 - 11.0	7.0 - 10.0	28.5	ON	5.0 - 10.0	0.0 - 10.5	9/9/16	1.0 - 2.0	PEST, PCBs, HERB 9/9/16	9/9/16	25.0 - 28.5	TPH-GRO, TPH-DRO,	12/5/16	Sub-Slab	VOCs
alakilo alakilo										(gasoline)						(Deep)	VOCS, SVOCS, FOG+TPH			
													4.5 - 5.5	Total AS, PEST,	9/21/16	4.4	TPH-GRO, TPH-DRO,			
														PCBs, HERB			VOCs, SVOCs, PPL			
													9.0 - 10.0	TPH-GRO, TPH- DRO, VOCs, NAP			Total Metals, PEST, PCBs, HERB			
													24.0 - 25.0	TPH-GRO, TPH-						
										Ī	П			DRO, VOCS, SVOCS						
ECS-B8, 7/7/16	30.90	2/7/16	30.90	00	5.0 - 5.5 and			28.5	ON.		0.0 - 287.0	9/9/16	1.0 - 2.0	PPL Total Metals,	9/9/16	25.0 - 28.5	TPH-GRO, TPH-DRO,	12/5/16	Sub-Slab	VOCs
50R-SB7) 9/9/16				_	8.0 - 30.0	5.5, and 8.0 - 30.0	-			(gasoline)				PEST, PCBs, HERB		(Deeb)	VOCs, SVOCs, OG+TPH			
										7.5 - 19.75			4.0 - 5.0	Total AS, PEST,	9/21/16	4.3	TPH-GRO, TPH-DRO,			
										(gasoline and				PCBs, HERB			VOCs, SVOCs, PPL			
										chemical)			19.0 - 20.0	TPH-GRO, TPH-			lotal Metals, PES1, PCBs, HERB			
										19.75 - 28.5			24.0 - 25.0	TPH-GRO, TPH-						
										(chemical)				DRO, VOCs, SVOCs	10					
20R-SB14 9/7/16 5	5.00	9/7/16	NA				4)	5.0	ON	ON	0.0 - 0.0	9/7/16	1.0 - 2.0	Total AS	NA	NA	NA	NA	NA	NA
													4.0 - 5.0	Total AS						
COR-SB15 9/7/16 5	5.00	91/1/6	NA				42	5.0	ON	ON	0.0 - 0.0	9/7/16	1.0 - 2.0	Dioxin	NA	NA	NA	NA	NA	NA

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TABLE 2. WELL CONSTRUCTION INFORMATION

FORMER ROBINSON TERMINAL NORTH 500 AND 501 NORTH UNION STREET ALEXANDRIA, VA

Well ID	Date Installed	Well Type	Well Diameter	Well Material	Total Depth	Screen Interval
TEC-MW1	4/27/06	PERM	1	PVC	10.0	UKN
TEC-MW2	4/27/06	PERM	1	PVC	16.0	NXN
TEC-MW3	NXN	PERM	1	PVC	UKN	NKN
TEC-MW4	4/27/06	PERM	1	PVC	12.0	NXN
TEC-MW5	4/27/06	PERM	1	PVC	16.0	NKN
TEC-MW6	4/28/06	PERM	1	PVC	16.0	NKN
TEC-MW7	4/27/06	PERM	1	PVC	12.0	UKN
ECS-MW2	12/20/07	PERM	1	PVC	UKN	NKN
ECS-MW4	12/27/07	PERM	1	PVC	UKN	NKN
ICOR-SB1	10/8/13	TEMP	1	PVC	13.5	3.5 - 13.5
ICOR-SB5	10/8/13	TEMP	1	PVC	14.0	4.0 - 14.0
ICOR-SB6	10/8/13	TEMP	1	PVC	13.0	3.0 - 13.0
ICOR-SB7	10/8/13	TEMP	1	PVC	13.0	3.0 - 13.0
ICOR-SB8	10/8/13	TEMP	1	PVC	13.5	3.5 - 13.5
ICOR-SB9	10/8/13	TEMP	1	PVC	18.0	8.0 - 18.0
ICOR-SB12	10/8/13	TEMP	1	PVC	14.0	4.0 - 14.0
MiHpt-5	9///16	PERM	1	PVC	16.0	6.0 - 16.0
MiHpt-7	9/9/6	PERM	1	PVC	17.0	7.0 - 17.0
MiHpt-8	9/9/6	PERM	1	PVC	20.0	10.0 - 20.0
MiHpt-8(D)	9/9/6	TEMP	0.5	SS	40.0	36.5 - 40.0
MiHpt-10(D)	9///16	TEMP	0.5	SS	28.5	25.0 - 28.5
MiHpt-14	9/8/16	PERM	1	PVC	16.0	6.0 - 16.0
MiHpt-14(D)	9/8/16	TEMP	0.5	SS	28.5	25.0 - 28.5
MiHpt-15	9/8/16	PERM	1	PVC	16.0	6.0 - 16.0
MiHpt-20	9/8/16	PERM	1	PVC	18.0	8.0 - 18.0
MiHpt-21	9/9/16	PERM	1	PVC	16.0	6.0 - 16.0
MiHpt-21(D)	9/9/16	TEMP	0.5	SS	28.5	25.0 - 28.5
MiHpt-22	9/9/16	PERM	1	PVC	16.0	6.0 - 16.0
MiHpt-22(D)	9/9/16	TEMP	0.5	SS	28.5	25.0 - 28.5
NOTES:						

NOTES:

ID = inner diameter
bgs = below surface grade
UKN = unknown
NP = well not present
NM = not measured
PERM = permanent
TEMP = temporary

TABLE 3. GROUNDWATER MEASUREMENTS

FORMER ROBINSON TERMINAL NORTH 500 AND 501 NORTH UNION STREET ALEXANDRIA, VA

!		-		:	
Well ID	Well TOC	Date	Total Well	Depth to	Groundwater
	Elevation (feet)		(feet bgs)	Groundwater (feet bgs)	Elevation (feet)
TEC-MW1	7.92	5/4/06	10.0	5.64	2.28
TEC-MW2	9.26	5/4/06	16.0	6.79	2.47
		9/21/16		6.74	2.52
		2/7/17		7.21	2.05
TEC-MW3	9.47	2/4/06	OKN	7.00	2.47
		9/21/16		7.22	2.25
		2/7/17		7.44	2.03
TEC-MW4	9.51	2/4/06	12.0	7.05	2.46
		9/21/16		7.23	2.28
		2/7/17		7.50	2.01
TEC-MW5	8.02	2/4/06	16.0	7.89	0.13
		9/21/16		7.58	0.44
		2/7/17		6.83	1.19
TEC-MW6	7.52	5/4/06	16.0	6.40	1.12
TEC-MW7	8.70	5/4/06	12.0	6.49	2.21
ECS-MW2	11.48	12/20/07	OKN	10.08	1.40
		9/21/16		6.97	4.51
		71/1/2		6.53	4.95
ECS-MW4	8.76	12/20/07	OKN	9.15	-0.39
		9/21/16		2.98	5.78
200	0	11/1/2	i.	0.00	0.30
ICOR-SB1	29.9	10/8/13	13.5	5.39	1.28
ICOR-SB5	8.89	10/8/13	14.0	9.89	-1.00
ICOR-SB6	8.25	10/8/13	13.0	10.51	-2.26
ICOR-SB7	11.61	10/8/13	13.0	8.01	3.60
ICOR-SB8	11.56	10/8/13	13.5	8.09	3.47
ICOR-SB9	11.60	10/8/13	18.0	10.06	1.54
ICOR-SB12	11.56	10/8/13	14.0	90.6	2.50
MiHpt-5	8.82	9/21/16	16.0	5.37	3.45
		2/7/17		6.62	2.20
MiHpt-7	8.97	9/21/16	17.0	5.18	3.79
		2/7/17		2.07	3.90
MiHpt-8	8.21	9/21/16	20.0	5.99	2.22
		2/7/17		6.19	2.02
MiHpt-14	11.48	9/21/16	16.0	7.90	3.58
		2/7/17		7.62	3.86
MiHpt-15	11.54	9/21/16	16.0	7.22	4.32
		2/7/17		6.59	4.95
MiHpt-20	11.59	9/21/16	18.0	9.41	2.18
		11/1/7		9.50	2.09
MIHpt-21	11.56	9/21/16	16.0	7.19	4.37
00 +cl 100	11 63	2/1/17	0.94	0.33	10.4
MIHPI-22	50.11	9/21/16	0.01	7.30	4.33
		711117		66.0	4.04

NOTES:
All survey data generated by a professional surveyor
TOC = top of casting
bgs = below ground surface
UKN = unknown

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TABLE 4A. TEC SOIL ANALYTICAL RESULTS

FORMER ROBINSON TERMINAL NORTH 500 AND 501 NORTH UNION STREET ALEXANDRIA, VA

Sample ID:	Units	VDEQ-	VDEQ-	VDEQ-	TEC-B1	TEC-B2	TEC-B3	TEC-B4	TEC-B6	TEC-B7	TEC-B8	TEC-B9	TEC-B10	TEC-B11	TEC-B12	TEC-B13
		PSSS	T2SCU	T3SCR	(11-12)	(12-16)	(11-12)	(01-6)	(11-12)	(10-12)	(2-4)	(12-14)	(12-14)	(9-11)	(2-8)	(11-12)
Date:					4/26/06	4/26/06	4/26/06	4/26/06	4/26/06	4/26/06	4/26/06	4/26/06	4/26/06	4/26/06	4/26/06	4/26/06
ТРН																
TPH-GRO	mg/kg	8300	JN	NE	ND	QN	ND	I QN	ND	QN	QN	0.62	ND ON	QN	0.62	QN QN
TPH-DRO	mg/kg	11000	JN	NE	ND	QN	ON	_ QN	ND	ΩN	QN	17	UN ON	ND	17	19
																Ī

NOTES:

(11-12) = designates depth sample was collected below ground surface TPH = total petroleum hydrocarbons
TPH-DRO = diesel range TPH
TPH-DRO = diesel range TPH
Mg/kg = milligrams per kilogram
VDEQ-PSS = Commonwealth of Virginia Department of Environmental
Quality (VDEQ) petroleum saturated soil standard
VDEQ-PSSCU = VDEQ Ther II screening concentration for unrestricted use soil (residential)
VDEQ-TSSCU = VDEQ Ther III screening concentration for restricted use soil (commercial/industrial)
ND = not detected above analytical method reporting limit
Bold and right justification designates target compound was detected at a

concentration above RL

Yellow highlighting designates target compound was detected at a concentration above a VDEQ screening concentration in at least 1 sample

1 of 1

TABLE 4B. TEC GROUNDWATER ANALYTICAL RESULTS

FORMER ROBINSON TERMINAL NORTH 500 AND 501 NORTH UNION STREET ALEXANDRIA, VA

Sample ID:	Units	VDEQ-	VDEQ-		VDEQ-CWT		TEC-MW1	TEC-MW2	TEC-MW3	TEC-MW4	TEC-MW5	TEC-MW6	TEC-MW7
		T3RGSL	T3CGSL	WTNC	WTC	ي							
					Dermal Contact & Incidential Ingestion	Inhalation							
Date:							5/1/06	5/1/06	5/1/06	5/1/06	5/1/06	5/1/06	5/1/06
ТРН													
TPH-GRO	mg/L	Ä	IJ.	NE	빌	Ä	Q	QN	QN	Q	QV	QV	Q
TPH-DRO	mg/L	J.	Ä	NE	Ä	ŊĘ	QN	QN	QN	QN	ΩN	QN	QN
VOCs													
Benzene	ng/L	941	1240	1050	863	15	Q	QV	QN	QV	QV	QV	Q
Toluene	ng/L	1920	8070	63100	35000	1020	QN	QN	ND	QN	ΩN	ΟN	QN
Ethylbenzene	ng/L	9'.2	27.6	3380	1410	61	QN	QN	ND	QN	ΩN	QN	QN
Total Xylenes	ng/L	492	2070	5940	11100	87.4	ND						
Methyl-t-butyl ether	ng/L	1330	1970	397000	152000	585	2	2	1	29	QN	ΩN	QN
Naphthalene	ug/L	36'8	20.1	73.5	222	0.722	ND						
NOTES:													

TPH = total petroleum hydrocarbons
TPH-DRO = diesel range TPH
TPH-DRO = gasoline range TPH
TPH-GRO = gasoline range TPH
VOCs = volatile organic compounds
ug/L = micrograms per liter
mg/L = militigrams per liter
VDEQ = Commonwelath of Virginia Department of Environmental Quality
VDEQ-13RGSL = VDEQ Ter III residential groundwater screening level
VDEQ-13CGSL = VDEQ Ter III commercial groundwater screening level
VDEQ-TAGCSL = VDEQ contaminants of concern for a construction worker in a trench
WTVC = water table contacted

ND = not detected above anaytical method reporting limit
Bold and right justification designates target compound was detected at a concentration above RL
Green highlighting designates target compound was detected at a concentration above the RL in at least 1 sample
Yellow highlighting designates target compound was detected at a concentration above the VDEQ screening level in at least 1 sample

TABLE 5A. ECS SOIL ANALYTICAL RESULTS (DETECTIONS ONLY)

FORMER ROBINSON TERMINAL NORTH 500 AND 501 NORTH UNION STREET ALEXANDRIA, VA

Sample ID:	Units	VDEQ-	VDEQ-	VDEQ-		ű	ECS-B1				ŭ	ECS-B2					ECS-B3			
		PSSS	TZSCU	T3SCR	(1-2.5)	(2.5-4)	(8.5-10)	E	(18.5-20)	(5.5-4)	(2-6.5)	(8.5-10)	E	(13.5-15)	(1-2.5)	(2.5-4)	(8.5-10)	(13.5-15)	(28.5-30)	6
Date:					1/3/08	1/3/08	1/3/08	H	1/3/08	1/3/08	1/3/08	1/3/08	_	1/3/08	1/3/08	1/3/08	1/3/08	1/3/08	1/3/08	· ·
ТРН																				
TPH-DRO	mg/kg	11000	ΞN	NE	NA	10200		20 00		26	NA		17	20	115	NA	4	40 ND		27
VOCs																				
Benzene	ug/kg	NE	7.76	5400	NA	ND		2.8 ND	ND		NA	ND		11	9.8	NA	5120	ON O	ND	
2-Butanone (MEK)	ug/kg	NE	1250	20000000 NA	NA	ND	ND	QN	ND		NA		7.3 ND	Z	ND	NA	ND	ND	ND	
n-Butylbenzene	ug/kg	Ä	14200	5100000 NA	NA	ΔN	ΩN	QN	QN		NA	QN	QN	Z	QN	NA	QN	QN	QN	
sec-Butylbenzene	ug/kg	PE	ΞN	10000001	NA	ΩN	ΩN	QN	ΩN		NA	QN	QN	Z	QN	NA	QN	QN	QN	
tert-Butylbenzene	ug/kg	Ä	ΞN	10000001	NA	QN	QN	QN	ΩN		NA	QN	QN	Z	ND	NA	ΔN	QN	QN	
Carbon Disulfide	ug/kg	뵘	492	370000 NA	NA	QN	Q	Q	Q		NA	QN	Q	Z	ND	AN	QN	QN	QV	
Ethylbenzene	ug/kg	뵘	5400	27000	NA	QV	QN	Q	Q		NA	QN	_	17	8.6	AN	QN	QN	QV	
Isopropylbenzene (Cumene)	ug/kg	¥	3410	110000 NA	NA	QN	ΩN	QN	QN		NA	QN	QN	Z	ND	NA	QN	QN	QN	
p-Isopropyitoluene	ug/kg	NE	ΒN	NE	NA	ND	QN	QN	ND		NA	ND	ΠN	Z	ND	NA	ND	ND	ND	
Methyl-t-butyl ether	ug/kg	Ä	41.7	220000 NA	NA	ΩN	ΩN	QN	ΩN		NA	QN	QN		4.2	NA	QN	2.	2.7	3.2
Naphthalene	ug/kg	Ä	26.2	18000	NA	136	9.	QN 02	QN		NA	ND		204	7.4	NA	QN	8	84 ND	
n-Propylbenzene	ug/kg	NE	2360	2100000 NA	NA	ND	ND	ND	ND		NA	ND	ND	Z	ND	NA	ND	ND	ND	
Styrene	ug/kg	NE	0099	3600000 NA	NA	ND	ND	ND	Z	ND	NA	ND	ND		4.2	NA	ND	ND	ND	
Toluene	ug/kg	NE	31100	4500000 NA	NA	7.7	7	13	3.4	4.2	NA		4.2	4.7	70	70 NA	196		5.6	2.7
1,2,4-Trimethylbenzene	ug/kg	NE	115	26000	NA	ND		13 ND	ND		NA	ND		14	16	NA	ND	-	10 ND	
1,3,5-Trimethylbenzene	ug/kg	NE	859	1000000 NA	NA	ND		13 ND	ND		NA	ND		14	7.5	7.5 NA	ND	1	11 ND	
Total Xylenes	ug/kg	NE	00089	270000 NA	NA	3.	3.4	14.1 ND	Z	ND	NA	ND		16.3	58	NA	ND	11.	11.1 ND	
RCRA Metals																				
Arsenic	mg/kg	NE	3.4	30	4	3 NA	NA	NA	NA	A	109	NA NA	NA	Z	NA	NA	NA	NA	NA	
Barium	mg/kg	NE	1500	19000	82.3	3 NA	NA	NA	NA	A	.06	90.9 NA	NA	Z	NA	NA	NA	NA	NA	
Cadmium	mg/kg	NE	7	80	ND	ΝΑ	ΝΑ	NA	NA	A	23.	23.6 NA	NA	Z	NA	NA	NA	NA	NA	
Chromium	mg/kg	NE	0.29	63*	16.3	3 NA	NA	NA	NA	A	17.	17.5 NA	NA	Z	NA	NA	NA	NA	NA	
Lead	mg/kg	NE	270	800	14.8	9 NA	NA	NA	NA	A	29	2 <mark>97</mark> NA	NA	Z	NA	NA	NA	NA	NA	
Mercury	mg/kg	NE	- 1	4.3	ND	NA	NA	NA	NA	A	75.	75.1 NA	NA	Z	NA	NA	NA	NA	NA	
Selenium	mg/kg	NE	5.1	510	ND	NA	NA	NA	NA	А	10.	10.3 NA	NA	Z	NA	NA	NA	NA	NA	
Silver	mg/kg	NE	1.19	510	ND	NA	NA	NA	NA	А	1.4	1.41 NA	NA	Z	NA	NA	NA	NA	NA	
Pesticides, PCBs, and Herbicides																				
Pesticides					NA	NA	NA	NA	NA		NA	NA	NA	Z	NA	ND	NA	NA	NA	
PCBs					NA	NA	NA	NA	NA		NA	NA	NA	Z	NA	ND	NA	NA	NA	
Herbicides					NA	NA	NA	NA	NA		NA	NA	NA	Z	NA	ND	NA	NA	NA	
NOTES:																				Ì

(11-13.5): designates depth sample was collected below ground surface
(11-13.5): designates depth sample was collected below ground surface
(11-13.5): designates depth sample was collected below ground surface
(11-13.5): designates of the triangle produce that the triangle produce conservation and Recovery Act
(11-13.5): designate of the triangle produce conservation and Recovery Act
(12-13.5): designates per kilogram
(13-13.5): designates above the analytical method reporting limit
(13-13.5): designates above the analytical method reporting limit
(13-13.5): designates above the analytical method reporting limit
(13-13.5): designates above the analytical method reportment of Environmental Quality (10-10.5)
(13-13.5): designates above the analytical method resignates target compound was detected at a concentration above RL
(13-13.5): designates a teget compound was detected at a concentration above a VDEQ screening concentration in at least 1 sample

2 of 3

TABLE 5A. ECS SOIL ANALYTICAL RESULTS (DETECTIONS ONLY)

FORMER ROBINSON TERMINAL NORTH 500 AND 501 NORTH UNION STREET ALEXANDRIA, VA

Charle C	PSSS	T3SCR	(5-6.5)	(13.5-15)	(18.5-20)	100	(00 1 00)	3 1 0	į (t)	(0 5 40)		
1/3/08	DRO mg/kg 11000 s s s s s s s s s	ļ	00,0,7	1/3/08	()	(23.5-25)	(28.5-30)	(2.5-4)	(2-0-2)	(8.5-10)	(28.5-30)	(33.5-35)
NA	mg/kg 11000 mg/kg 11000 mg/kg NE mg/kg	Ļ	1/3/08	1000	1/3/08	1/3/08	1/3/08	1/3/08	1/3/08	1/3/08	1/3/08	1/3/08
NO	mg/kg 11000 mg/kg 11000 mg/kg NE mg/kg	1										
N	Ug/kg NE Ug/kg U	¥	123	2		2.		6	5 NA	20	58	QN
N	Lugrico NE											
NA	Ug/kg NE Ug/kg Ug	5400	ND	.9	3 NA	4.0	QN 9	ND	AN	ND	QN	
NA	Ug/kg NE Ug/kg Ug				ΑN		ND	ND	AN	ND	7.3	R
NA	Ug/kg NE Ug/kg U	5100000		ND	ΑN		QN	QN	ΑN	QN	QN	QN
NO	Lugkg NE Lug	10000000		QN	ΝΑ		QN	QN	NA	QN	QN	QN
NP	Ug/kg NE	10000000		DN	ΑN		QN	QV	AN	QN	QN	Q
N	Ug/kg NE Ug/kg	370000		GN	ΑN		S	S	ĄN	3.3	CN	!
ND	Cumene) tig/kg NE tig/kg N		2.2		AN		CN	E S	ĄN		S	
ND	ug/kg NE ug/kg NE ug/kg NE				ΔN	-6	ON CO	2 2	ΔN		S CN	S
00 ND	ug/kg NE ug/kg NE ug/kg NE				₹			2 2	C d	166	300	
00 ND	ug/kg NE	_			₹		Q Q	2 2		2	CN	CIN
NA	DA/OII	_				15.			Ŏ N	14		
NA		_							VIV		CIN	
1	NE GALLES INC.				Ç		2 2	2 2	Ç	2 2	2 2	2 2
00 4.9 6.5 NA 12 ND NA	11 N 04/01		16		ΔN		CIN O	2 2	NΑ	12	5.7	
12.2 12.2 12.3 12.4 12.5	NE CASE AND CONTRACTOR OF CONT	26000	0 7	- 8	C < Z	7		2	C < Z	3		
NA	an By/Sn	400000	4.9	Ö	V .			2	\ \ \ \	10		
12.2	an 6y/6n allegiledik	070000	1.4	7.	Y		N 2	2 2	<u> </u>		3.0	
NA	NE NE NE	27,0000	7.21		YN B	747	ON	ON.	Į.	ON.	0.0	
NA	TM sollows			4	4	4	4	< <u>7</u>		4	4	<
NA	III By/BIII	Т		V .	()	Y .	X < 1	<u> </u>	7 00	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Y	<u> </u>
NA	III BY/BIII	T		Y .	()	Y .	X .	<u> </u>	99.7	X .	Y	X .
	IIIg/kg NE			Y N	42	Y Y	Y V	X ×	3.7	AN O	¥ 2	Y S
NA	III BINA			1	<u> </u>	<u> </u>	<u> </u>	<u> </u>		\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	<u> </u>	<u> </u>
NA N	mg/kg NE			NA.	AN S	NA S	NA 	AN .	11.	11.5 NA	NA.	NA:
NA	mg/kg NE	T		NA	NA	NA	NA	NA		5 NA	NA	NA
NA N	um mg/kg NE			NA	NA	NA	NA	NA		NA	NA	NA
NA	mg/kg NE			NA	NA	NA	NA	NA		NA	NA	NA
AN A	ticides, PCBs, and Herbicides											
NA N	ticides			NA	ND	NA	NA	NA	NA	NA	NA	NA
NA NA NA NA NA NA NA NA	SE SE			NA	ND	NA	NA	NA	NA	NA	NA	NA
TRES. 14 Selsignates depth sample was collected below ground surface 15 total petroleum hydrocarbons 16 total petroleum hydrocarbons 17 Executed of the petroleum hydrocarbons 18 Executed organic compounds and Recovery Act 18 Executed conservation and Recovery Act 18 Executed organic compounds 18 Executed organic concontration for investicited to execute the petroleum 18 Executed organic concontration for unrestricted use soil (residential) 18 Executed organic concontration for unrestricted use soil (residential)	bioides			NA	ND	NA	NA	Ϋ́	ΑN	NA	NA	NA
THURA DE deside railing TPH ACARO Le gastel railing TPH ACARO Legalorine r	ES. 13.5) = designates depth sample was collected below ground surface = total petroleum hydrocarbons				! -	:	:					
DCs = volatile organic compounds PResource Organication and Recovery Act Resource Conservation and Recovery Act Resource Resource Conservation and Recovery Act Resource Res	-DKO = diesel range TPH -GRO = gasoline range TPH											
And a resoluted conservation and recovery Act Resoluted belongian tyde militigarins per kilogram ying militigarins per kilogram a not discussed above the analytical method reporting limit a not discussed above the analytical method reporting limit and the conservation of Virginia Department of Environmental Quality (VDEQ) petroleum salturated soil standard EQ-TSSQL = VDEQ Tier III screening concentration for unrestricted use soil (residential)	s = volatile organic compounds											
The programs per kilogram We a miligrants per kilogram The and analyzed per kilogram The na manybrad per kilogram method reporting limit The name of the	A = Resource Conservation and Recovery Act											
We a milligants per kilogram — and averaged above the analytical method reporting limit EGLPSS = Commonwealth of Virginia Department of Environmental Quality (VDEQ) petroleum standared soil attandard EGLTSSQ = VEDC The III screening conconstration for unrestricted use soil (residential)	s = polychiomiaecu ophieny)s j = micrograms per kilogram											
and analyzed above the analytical method reporting limit to a road detail y VDEQ) petroleum setQ-reSS = Commonwealth of Virginia Department of Environmental Quality (VDEQ) petroleum setQ-reSS = Commonwealth of Virginia Department of Environmental Department Depart	g = milligrams per kilogram											
FG-PSS = Commonwealth of Virginia Department of Environmental Quality (VDEQ) petroleum saturated soil standard saturated soil standard = Commonwealth of Virginia Department of runestricted use soil (residential)												
saturates sun santuari saturates sun santuaria CEC-173CJ = VDED Tier III screening concentration for unrestricted use soil (commercialin/dustrial)	onmental	etroleum										
FG-T3SCR = VDEQ Tier III screening concentration for restricted use soil (commercial/industrial)	arulated son standard Q-T2SCU = VDEQ Tier II screening concentration for unrestricted use soil (residentia	(1										
ld and right intiliantian designation and used physical at a consentration about	Q-T3SCR = VDEQ Tier III screening concentration for restricted use soil (commercial	(/industrial)										
oud an I upit distribution (respirators sugar compound was detected at a conceiluration) above the = total chromiting (retiremining fliators).	and right justification designates target compound was detected at a concernation a stal chromium (chromium III and VI)	DOVE NE										
allow highlighting designates target compound was detected at a concentration above a VDEQ	Yellow highlighting designates target compound was detected at a concentration above a VDEQ	VDEQ										

TABLE 5A. ECS SOIL ANALYTICAL RESULTS (DETECTIONS ONLY)

FORMER ROBINSON TERMINAL NORTH 500 AND 501 NORTH UNION STREET ALEXANDRIA, VA

Sample ID:	Units	VDEQ-	VDEQ-	VDEQ-				ECS-B6			
		PSSS	T2SCU	T3SCR	(1-2.5)	(2-6.5)	(8.5-10)	(13.5-15)	(18.5-20)	(23.5-25)	(28.5-30)
Date:					1/3/08	1/3/08	1/3/08	1/3/08	1/3/08	1/3/08	1/3/08
ТРН											
TPH-DRO	mg/kg	11000	JN	NE	NA	142	111	31		68 NA	33
VOCs											
Benzene	ug/kg	ЭN	2'26	5400	NA	226	QN	16	16 ND	NA	QN
2-Butanone (MEK)	ug/kg	ЭN	1250	20000000 NA	NA	ND	QN	QN	ΩN	NA	QN
n-Butylbenzene	ug/kg	빌	14200	5100000 NA	NA	366	366 ND	3.2	3.2 ND	ΑN	3.6
sec-Butylbenzene	ug/kg	₽N	ΞN	10000001	NA	ΔN	QN	56	26 ND	NA	QN
tert-Butylbenzene	ug/kg	ЭN	ΞN	100000001	NA	ΔN	QN	11	11 ND	ΑN	ΩN
Carbon Disulfide	ug/kg	∃N	492	370000	NA	ND	QN	QN	QN	AN	ΩN
Ethylbenzene	ug/kg	ЭN	5400	27000	NA	1360 ND	QN	6.4	6.4 ND	AN	ΩN
Isopropylbenzene (Cumene)	ug/kg	¥	3410	110000	NA	ND	ND	8.4	8.4 ND	NA	ND
p-Isopropyltoluene	ug/kg	ЭN	ΞN	ЭN	NA	473	473 ND	3.8	3.8 ND	NA	ND
Methyl-t-butyl ether	ug/kg	ЭN	41.7	220000	NA	ND	QN	QN	ND	ΝΑ	ND
Naphthalene	ug/kg	밁	26.2	18000	NA	ND	QN	5.2	2200	NA	ΔN
n-Propylbenzene	ug/kg	ЭN	2360	2100000	NA	ND	QN	2.8	5.8 ND	NA	.7.
Styrene	ug/kg	ЭN	0099	3600000	NA	ND	QN	QN	ND	NA	ΔN
Toluene	ug/kg	¥	31100	4500000	NA	3800	238		36 ND	NA	2.9
1,2,4-Trimethylbenzene	ug/kg	¥	115	26000	NA	1050	020 ND	18	18 ND	NA	19
1,3,5-Trimethylbenzene	ug/kg	¥	658	1000000	NA	1870 ND	ND	11	11 ND	NA	9.8
Total Xylenes	ug/kg	¥	63000	270000	NA	4209	361		38 ND	NA	3.5
RCRA Metals											
Arsenic	mg/kg	N	3.4	30	NA	NA	NA	NA	NA	9.9	6.6 NA
Barium	mg/kg	¥	1500	19000	NA	NA	NA	NA	NA	46	46 NA
Cadmium	mg/kg	¥	7	80	NA	NA	NA	NA	NA	ND	NA
Chromium	mg/kg	¥	0.29	63*	NA	NA	NA	NA	NA	49.9 NA	NA
Lead	mg/kg	N	270	800	NA	NA	NA	NA	NA	39.5 NA	NA
Mercury	mg/kg	ЭN	- 1	4.3	NA	NA	NA	NA	NA	0.06 NA	NA
Selenium	mg/kg	ЭN	5.1	510	NA	NA	NA	NA	NA	QN	NA
Silver	mg/kg	N	1.19	510	NA	NA	NA	NA	NA	ND	NA
Pesticides, PCBs, and Herbicides											
Pesticides					ND	NA	NA	NA	ND	NA	NA
PCBs					ND	NA	NA	NA	ND	NA	NA
Herbicides					ND	NA	NA	NA	ND	NA	NA

NOTES:

(10115.5) = designates depth sample was collected below ground surface
TPH-Latch percleann hydrocarbons
TPH-Latch percleann hydrocarbons
TPH-DRO = deseal trange TPH
VOCE = volatile organic compounds
VOCE = volatile organic compounds
RCRA = Resource Conservation and Recovery Act
PCRB = polyuthorinated biphenyls
WOE = polyuthorinated biphenyls
WOE = polyuthorinated biphenyls
WOE = mitrograms pre kilogram
NA = not detected above the analytical method reporting limit
VDEC-PSCS = Commonwealth of Virginia Department of Environmental Quality (VDEQ) petroleum
saturated soil standard
VDEC-TSCS = VDEQ Ther ill screening concentration for unrestricted use soil (residentia)
VDEC-TSCS = VDEQ Ther ill screening concentration for unrestricted use soil (commercialificustrial)
Bold and right Laistfaction designates target compound was detected at a concentration above RL
= total chronium (arbonium Ill and VI)
Yellow highlighting designates larget compound was detected at a concentration above R VEDC
screening concentration in at least 1 sample

3 of 3

TABLE 5B. ECS GROUNDWATER ANALYTICAL RESULTS (DETECTIONS ONLY)

FORMER ROBINSON TERMINAL NORTH 500 AND 501 NORTH UNION STREET ALEXANDRIA, VA

Sample ID:	Units	VDEQ-	VDEQ-		VDEQ-CWT		ECS-MW2	ECS-MW4
		T3RGSL	T3CGSL	WTNC	WTC			
					Dermal	Inhalation		
					Contact &			
					Incidential			
Date:							1/4/08	1/4/08
ТРН								
TPH-DRO	mg/L	NE	NE	NE	NE	NE	2.87	0.99
VOCs								
Benzene	ng/L	941	1240	1050	863	15	09	QN 09
Naphthalene	ng/L	3.98	20.1	73.5	257	0.722	QN	8.
Total Xylenes	ng/L	492	2070	2940	11100	87.4	3.1	4.2
SVOCs								
Acenaphthene	ng/L	NE	NE	뵘	2870	NE	QN QN	1
Acenaphthylene	ng/L	NE	ΞN	ЭN	1460	NE	QN	10
Dimethyl phthalate	ng/L	NE	ЭN	ΞN	37500	NE	3.9 UD	ND
Fluorene	ng/L	NE	JN	ΞN	4250	NE	QN	5.6
2-Methylnaphthalene	ng/L	NE	ΞN	ΞN	56.5	NE	QN	2.3
Naphthalene	ng/L	3.98	20.1	73.5	257	0.722	QN	8.3
Phenanthrene	ng/L	NE	JN	JN	1430	NE	ND	2.2
Total RCRA Metals								
Arsenic	mg/L	NE	NE	뵘	NE	NE	0.020	0.009
Barium	mg/L	NE	ΞN	ΞN	NE	NE	0.129	0.581
Cadmium	mg/L	NE	ЭN	ΞN	36	NE	0.160 ND	ND
Chromium	mg/L	NE	ΞN	ΞN	26.6	NE	0.015	0.048
Lead	mg/L	NE	ЭN	ΞN	NE	NE	0.044	0.112
Mercury	mg/L	0.067	0.281	65'5	NE	0.895	QN	ND
Selenium	mg/L	NE	NE	ЭN	NE	NE	0.005	0.002
Silver	mg/L	NE	NE	ΞN	NE	NE	ND	QN

Sinifer

NOTES:

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The Lobb percebum hydrocarbons

The Hard black percebum hydrocarbons

NOCS = vocales regards compounds

SVICOS = sessen-MOCs

RCRA = Resource Conservation and Recovery Act

Upg L = mingrans per liter

Mg L = More Townwealten of Virginia Department of Environmental Quality

VICE - 1747 = VDEC near Internation above RL

VICE - Market table contacted

WTC = water table mind = water table water table table

TABLE 6A. ICOR 2013 SOIL ANALYTICAL RESULTS (DETECTIONS ONLY)

FORMER ROBINSON TERMINAL NORTH 500 AND 501 NORTH UNION STREET ALEXANDRIA, VA

Sample ID:	Units	CAS No.	VDEQ- PSSS	VDEQ- T2SCU	VDEQ- T3SCR	ICOR-SB2(3-	t) ICOR-SB2(5-6)	ICOR-SB5(6-7) ICOR-SB6(2-3)	ICOR-SB2(3-4) ICOR-SB2(5-6) ICOR-SB5(6-7) ICOR-SB6(2-3) ICOR-SB7(7.5-8.5) ICOR-SB8(2-3) ICOR-SB8(7.5-8.5) ICOR-SB9(4.5-5.5)	ICOR-SB8(2-3)	ICOR-SB8(7.5-8.5)	ICOR-SB9(4.5-5.5)
Date:						10/8/13	10/8/13	10/8/13	10/8/13	10/8/13	10/8/13	10/8/13	10/8/13
TPH EPA 8015													
TPH-GRO	mg/kg		8300	N.	뵘	NA	1.2	<0.11	AN	240	NA	370	NA
TPH-DRO	mg/kg		11000	NE.	NE	NA	2.2	420	NA	3800	NA	42	NA
TCL VOCs EPA 8260B													
Acetone	ug/kg	67-64-1	JN	2750	63000000	NA	<23	<23	NA	<2200	NA	<2400	NA
Isopropylbenzene	ng/kg	98-82-8	JN	3410	110000	NA	15	<5.6	NA	<560	NA	009>	NA
Methylcyclohexane	ug/kg	108-87-2	N	NE	N	NA	41	<23	NA	<2200	NA	16000	NA
Naphthalene	ug/kg	91-20-3	Ŋ	26.2	18000	NA	14	7.4	NA	<560	NA	009>	NA
TCL SVOCs EPA 8270C													
Fluoranthene	ug/kg	206-44-0	JN	230000	2200000	NA	260	<190	NA	<740	NA	<200	NA
Pyrene	ug/kg	129-00-0	N.	65500	1700000	NA	210	<190	ΝΑ	<740	NA	<200	NA
PPL Metals EPA 6020A													
Antimony	mg/kg	7440-36-0	JN.	3.1	41	<2.4	NA	<2.1	<2.6	<2.8	<2.8	<2.2	<2.8
Arsenic	mg/kg	7440-38-2	NE.	3.4	30	2.8	NA	3.8	11	130	009	12	3.6
Chromium	mg/kg	7440-47-3	JN	0.29*	63*	07	NA	<2.1	26	11	22	12	10
Copper	mg/kg	7440-50-8	JN	310	4100	18	NA	4.6	200	9.7	18	2.0	12
Lead	mg/kg	7439-92-1	NE	270	800	15	NA	16	32	4.7	9.1	7.2	09
Mercury	mg/kg	7439-97-6	NE	0.94	4	260'0>	NA	<0.084	<0.10	<0.11	<0.11	<0.089	0.56
Nickel	mg/kg	7440-02-0	NE	39.1	2000	77	NA	<2.1	26	5.9	21	22	9.4
Selenium	mg/kg	7782-49-2	NE	5.1	510	<2.4	NA	<2.1	<2.6	<2.8	<2.8	<2.2	<2.8
Silver	mg/kg	7440-22-4	JN	1.19	510	<2.4	NA	<2.1	<2.6	<2.8	<2.8	<2.2	<2.8
Thallium	mg/kg	mg/kg 7440-28-0	N	820.0	1	<1.9	NA	<1.7	<2.1	<2.2	<2.2	<1.8	<2.2
Zinc	mg/kg	7440-66-6	NE	584	31000	89	NA	<8.4	1100	33	63	37	2000
Chromium VI EPA 7196A													
Chromium VI	mg/kg	18540-29-9	NE	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA
TCLP RCRA Metals EPA 3010A/6020A													
Arsenic	ng/L	7440-38-2	NE	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA
hea!	//	7439-92-1	ΔN	±۷	ΗN	NA	ΔN	ΥN.	\ <u>\</u>	VIV	\Z	VIV	V 14

NOTES:

(0.5.1.5) = designates depth sample was collected below ground surface
(0.5.1.5) = designates depth sample was collected below ground surface
(0.5.1.5) = designates depth sample was collected below ground surface
(0.5.1.5) = designate ground the compounds
(0.5.1.5) = designate organic compound was detected at a concentration above RL
(0.5.1.5) = designates argue compound was detected at a concentration above RL
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TABLE 6A. ICOR 2013 SOIL ANALYTICAL RESULTS (DETECTIONS ONLY)

FORMER ROBINSON TERMINAL NORTH 500 AND 501 NORTH UNION STREET ALEXANDRIA, VA

Sample ID:	Units	CAS No.	VDEQ-	VDEQ-	VDEQ-	ICOR-SB10(2-3)	ICOR-SB10(5.5-6.5)	ICOR-SB10(2-3) ICOR-SB10(5.5-6.5) ICOR-SB11(5.5-6.5)	ICOR-SB12(6-7)	ICOR-SB13(5.5-6.5)
			PSSS	T2SCU	T3SCR					
Date:						10/8/13	10/8/13	10/8/13	10/8/13	10/8/13
TPH EPA 8015										
TPH-GRO	mg/kg		0088	ЭN	NE	NA	NA	<0.12	NA	<0.12
TPH-DRO	mg/kg		11000	ЭN	NE	NA	NA	<4.8	NA	<5.1
TCL VOCs EPA 8260B										
Acetone	ug/kg	67-64-1	NE	2750	63000000	NA	NA	22	NA	NA
Isopropylbenzene	ug/kg	98-82-8	∃N	3410	110000	NA	NA	<5.9	NA	NA
Methylcyclohexane	ng/kg	108-87-2	∃N	ЭN	NE	NA	NA	<24	NA	NA
Naphthalene	ug/kg	91-20-3	∃N	26.2	18000	NA	NA	<5.9	NA	NA
TCL SVOCs EPA 8270C										
Fluoranthene	ug/kg	206-44-0	ЭN	230000	2200000	NA	NA	<210	NA	NA
Pyrene	ng/kg	129-00-0	∃N	00559	1700000	NA	NA	<210	NA	NA
PPL Metals EPA 6020A										
Antimony	mg/kg	7440-36-0	∃N	3.1	41	12	<2.3	<3.0	<2.0	<2.8
Arsenic	mg/kg	7440-38-2	∃N	3.4	30	1300	190	3.9	3.1	6.6
Chromium	mg/kg	7440-47-3	NE	0.29*	63*	18	19	24	22	30
Copper	mg/kg	7440-50-8	NE	310	4100	1800	270	21	16	29
Lead	mg/kg	7439-92-1	NE	270	800	2200	10	12	14	17
Mercury	mg/kg	7439-97-6	NE	0.94	4	7.8	0.17	0.19	0.15	0.24
Nickel	mg/kg	7440-02-0	NE	39.1	2000	13	18	23	24	21
Selenium	mg/kg	7782-49-2	NE	5.1	510	8.2	<2.3	<3.0	<2.0	<2.8
Silver	mg/kg	7440-22-4	ЭN	1.19	510	15	<2.3	<3.0	<2.0	<2.8
Thallium	mg/kg	7440-28-0	ЭN	0.078	1	3.0	<1.8	<2.4	<1.6	<2.2
Zinc	mg/kg	7440-66-6	NE	584	31000	2100	620	61	1700	1700
Chromium VI EPA 7196A										
Chromium VI	mg/kg	18540-29-9	NE	NE	NE	NA	NA	NA	NA	<0.97
TCLP RCRA Metals EPA 3010A/6020A										
Arsenic	ng/L	7440-38-2	NE	NE	NE	1.4	NA	NA	NA	NA
Lead	ng/L	7439-92-1	ΞN	ЭN	NE	7.8	NA	NA	NA	NA
NOTE OF										

NOTES:

(0.5.1.5) = deginates depth sample was collected below ground surface
THH = total petroleum hydrocarbons
THH = total petroleum hydrocarbons
THH = total petroleum hydrocarbons
TCL = Traget Compound THH
TCL = Traget Compound THH
TCL = Traget Compound THH
TCL = Traget Compound The ThH = THH
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TCL = TRAGET THH
TCL =

TABLE 6B. 2014 GEOTECHNICAL INVESTIGATION SOIL ANALYTICAL RESULTS

FORMER ROBINSON TERMINAL NORTH 500 AND 501 NORTH UNION STREET ALEXANDRIA, VA

Sample ID:	Units	CAS No.	VDEQ- T2SCU	VDEQ- T3SCR	ECS-B7(2.5-10)	ECS-B8(2.5-4)	ECS-B9(2.5-10)	ECS-B10(4-10)	ECS-B11(5-10)	ECS-B12(5-10)
Date:					10/6/14	10/7/14	10/7/14	10/8/14	10/10/14	10/8/14
RCRA Metals EPA 6020A										
Arsenic	mg/kg	7440-38-2	3.4	30	1600	1900	11	8.9	18	7.7
Barium	mg/kg	7440-39-3	1500	22000	320	190	81	170	140	81
Cadmium	mg/kg	7440-43-9	7	86	17	12	<2.7	<2.6	<2.7	<2.9
Chromium	mg/kg	7440-47-3	3*	63 *	27	20	21	5.4	15	3.4
Lead	mg/kg	7439-92-1	270	008	1500	370	15	29	009	160
Mercury	mg/kg	7439-97-6	0.94	7	27	20	<0.11	0.18	0.23	0.27
Selenium	mg/kg	7782-49-2	5.1	089	10	0.9	<2.7	<2.6	3.2	<2.9
Silver	mg/kg	7440-22-4	1.58	089	12	2.8	<2.7	<2.6	5.9	<2.9
TCLP RCRA Metals EPA 3010A/6020A										
Arsenic	ng/L	7440-38-2	NE	ΞN	2.0	6.3	NA	NA	NA	NA
Barium	ng/L	7440-39-3	NE	ΞN	<1.0	1.0	NA	NA	NA	NA
Cadmium	ng/L	7440-43-9	NE	ΞN	0.063	0.070	NA	NA	NA	NA
Chromium	ng/L	7440-47-3	NE	NE	<0.050	<0.050	NA	NA	NA	NA
Lead	ng/L	7439-92-1	NE	ЭN	0.75	<0.050	NA	NA	NA	NA
Mercury	ng/L	7439-97-6	NE	ΞN	<0.0020	<0.0020	NA	NA	NA	NA
Selenium	ng/L	7782-49-2	NE	∃N	<0.050	<0.050	NA	NA	NA	NA
Silver	ng/L	7440-22-4	NE	∃N	<0.050	<0.050	NA	NA	NA	NA

^{(2.5-4) =} designates depth sample was collected below ground surface TCLP = Toxic Characteristic Leaching Procedure RCRA = Resource Conservation and Recovery Act EPA 6020A = United States Environmental Protection Agency SW-846 analytical method

mg/kg = milligrams per kilogram ug/L = micrograms per liter NA = not analyzed VDEQ-T2SCU = Commonwelath of Virginia Department of Environmental Quality (VDEQ) Tier II screening

concentration for unrestricted use soil (residential)

VDEQ-T3SCR = VDEQ Tier III screening concentration for restricted use soil (commercial/industrial)

<1.0 = not detected above analytical method reporting limit (RL)

^{* =} total chromium (chromium III and VI)
Bold and right justification designates target compound was detected at a concentration above RL
Yellow highlighting designates target compound was detected at a concentration above a VDEQ
screening concentration in at least 1 sample

TABLE 6C. 2016 ICOR SOIL ANALYTICAL RESULTS (DETECTIONS ONLY)

FORMER ROBINSON TERMINAL NORTH 500 AND 501 NORTH UNION STREET ALEXANDRIA, VA

1300 | 91-57-6 | 91-90 | NE | 1100 | 3000000 | NA |
102-127	91-90	91-90	NE	324000	24000000	NA		
102-127	91-90	91-90	NE	324000	24000000	NA		
102-127	91-90	91-90	91-90	91-90	NA			
102-129	91-90	NE	1500	25000	NA			
102-129	91-90	NE	1500	25000	NA			
102-129	91-90	NE	1500	25000	NA			
102-129	91-90	NE	1500	250000	NA			
102-129	91-90	NE	1500	250000	NA			
102-129	91-90	NE	15000	250000	NA			
102-129	91-90	NE	25000	250000	NA			
102-129	91-90	NE	25000	250000	NA			
102-129	91-90	NE	25000	250000	NA			
102-129	91-90	NE	250000	NA				
102-129	91-90	NE	250000	NA				
102-129	91-90	NE	250000	NA				
102-129	91-90	91-90	91-90					
102-129	91-90	91-90	91-90					
102-129	91-90	91-90	91-90					
102-129	91-90	91-90	91-90					
102-129	91-90	91-90	91-90					
102-129	91-90	91-90	91-90	91-90				
102-129	91-90	91-90	91-90	91-90				
102-129	91-90	91-90	91-90	91-90				
102-129	91-90	91-90	91-90	91-90	91-90			
102-129	91-90	91-90	91-90	91-90	91-90			
102-129	91-90	91-90	91-90	91-90	91-90	91-90	91-90	91-90
102-129	91-90	91-90	91-90	91-90	91-90	91-90	91-90	91-90
 ug/kg
 NE
 4370
 96000

 ug/kg
 NE
 16000
 68000

 ug/kg
 NE
 3600
 52000

TABLE 6C. 2016 ICOR SOIL ANALYTICAL REBULTS (DETECTIONS ONLY)
FORMER ROBINSON TERMINAL NORTH
SOO AND 501 NEWTH MONUSTREET
LECKNERA, NA

Sample ID:	CAS No.	Units	VDEQ-	VDEQ-	VDEQ-	MiHpt-08(37.8-38.8,	MiHpt-08(37.8-38.8) MiHpt-10(24.5-25.5)	MiHpt-12(1-2)	MiHpt-13(1-2)	MiHpt-13(4-5)	MiHpt-14(1-2)	MiHpt-14(4-5) N	MiHpt-14(5-6) N	MiHpt-14(25-26)	MiHpt-15(1-2)	MiHpt-15(4-5)	MiHpt-16(1-2)	MiHpt-16(4-5)	MiHpt-16(8-9)	MiHpt-17(1-2)	MiHpt-17(4-5)	MiHpt-18(1-2)
Sample Date:						9/6/16	9/6/16	9/7/16	9/2/16	9/1/16	9/8/16	9/8/16	9/8/16	9/8/16	9/8/16	9/8/16	9/8/16	9/8/16	9/8/16	91/1/6	9/7/16	9/2/16
TPH 8015																						
TPH-GRO (C6-C10)	C6C10GRO	mg/kg	8300	NE	NE	0.160				NA NA	NA NA	A NA		<0.11 N								NA
TPH-DRO (C10-C28)	C10C28DRO mg/kg	mg/kg	11000	밁	W	<15	150 N	NA	NA						NA	NA NA		NA	NA	NA	NA	NA
ICL VOCS 8260B	07 04 4	- Congress	Ц	0320	00000000	99	6						346									NIA
Cyclohexane	110-82-7	no/ka	y w	55500	2700000	<27		NA N	Z Z	Z Z	AN AN		2	200	Z Z	NA NA	£ \$	AN AN	X X	NA NA	Y AN	¥ *
Ethylbenzene	100-41-4	ua/ka	¥	39700	250000																	NA.
Isopropylbenzene	98-82-8	ng/kg	¥	3940	1100000																	NA
Methylcyclohexane	108-87-2	ng/kg	¥	¥	¥																	NA
Naphthalene	91-20-3	ng/kg	¥	114	29000	<6.8	101															NA
Tetrachloroethene	127-18-4	ng/kg	Ä	80.7	39000	<6.8	46.9						c4.7									NA
Toluene	108-88-3	ng/kg	¥	31100	4700000	€6.8																NA
m,p-Xylenes	108-38-3	ng/kg	¥	914	240000	<14		NA														NA
o-Xylene	95-47-6	ng/kg	¥	926	280000	€6.8																NA
TCL SVOCs 8270C																						
2-Methylnaphthalene	91-57-6	ng/kg	¥	1100	300000	<250		NA P														NA
Acenaphthene	83-32-9	ng/kg	¥	32100	4500000	<250		NA P														NA
Anthracene	120-12-7	ng/kg	NE	354000	23000000	<250																NA
Benzo(a)anthracene	56-55-3	ng/kg	NE	1500	29000	<250																NA
Benzo(a)pyrene	50-32-8	ng/kg	NE	150	2900			NA N														NA
Benzo(b)fluoranthene	205-99-2	ng/kg	¥	1500	29000	<250	3800															NA
Benzo(g,h,i)perylene	191-24-2	ng/kg	NE	170000	2300000																	NA
Benzo(k)fluoranthene	207-08-9	ng/kg	NE	15000	290000			NA I														NA
Chrysene	218-01-9	ug/kg	NE	150000	2900000	<250																NA
Dibenz(a,h)Anthracene	53-70-3	ug/kg	Ä	150	2900	<250																NA
Dibenzofuran	132-64-9	ng/kg	Ä	870	100000	<250	1200															NA
Fluoranthene	206-44-0	ng/kg	¥	230000	3000000	-	П															NA
Fluorene	86-73-7	ng/kg	¥ :	31900	3000000					NA.	NA	A S		×190	Z Z	NA		NA		NA.	NA	NA
Indeno(1,2,3-c,d)Pyrene	193-39-5	ug/kg	¥ !	1500	29000	<250																NA.
Naphthalene	91-20-3	ngvkg	ž į	#LL 0	000000			NA.														NA.
Phenanthrene	82-01-8	ngvkg	¥ :	34900	2300000		8200															NA
ryrene	0-00-671	ngvkg	NE	90300	23000000	0675	Т	NA														NA.
PCBs 8082											0.00											
PCBs		mg/kg				NA	NA	NA			<0.056 NA	A		NA	NA	NA <	<0.059	<0.067				NA
Pesticides oue ib	0 7 3 04	and the same	L	0407	00000	*14																414
0004.4	22 65 0	Sylon	u u	16000	00000	V V	VIV.	VIV			NA PAR	× ×		VA			747	0.00				VA.
4,4-DDE	0.000	Su/Sn	<u> </u>	0000	00000	4																44
Horbicidos 8161A	00-59-0	ng/kg	N	2000	22000	YM.																4
2.4.5-T	93-76-5	io/ka	Ä	Ä	EN.	NA	AN	AN	NA	AN	AN C2>	AN		NA	NA	NA	O.5	V 56>		NA	AN	NA
Dioxins 8290A		0	!																			
2,3,7,8-TCDD	1746-01-6	ng/kg	Ä	5.1	73	NA	NA	NA P	NA	NA NA	NA NA	A		NA	NA NA	NA	0.115 J	NA	NA	NA	NA	NA
PPL Metals 6020A																						
Antimony	7440-36-0	mg/kg	Ä	3.1	41	NA		NA	12 N	NA	18 NA					NA NA			NA			NA
Arsenic	7440-38-2	mg/kg	¥	3.4	30	NA		400		32		93			9.6	1800			9.9		6.9	12
Cadmium	7440-43-9	mg/kg	¥	7	86	NA		NA		V.									NA			NA
Chromium	7440-47-3	mg/kg	¥	0.29*	63*	NA		NA		¥.				Ą					NA			NA
Copper	7440-50-8	mg/kg	¥	310	4100	NA		4A		A				Y.	35 N				NA	0069		NA
Lead	7439-92-1	mg/kg	2	270	800	NA		NA		A	- 11			Ą	Т				NA	Т		NA
Mercury	7439-97-6	mg/kg	¥ :	0.94	4	NA		A	T	A				Ą	Т				NA			NA
Nickel	7440-02-0	mg/kg	¥ :	39.1	2000	NA		NA		A.					12				NA			NA
Selenium	7782-49-2	mg/kg	¥ :	5.1	210	NA:		Y.		A									NA	Т		NA.
Silver	7440-22-4	mg/kg	¥ ¥	1.19	210	Y N	W V	Y S	2 2 2 2	NA NA	2.3 NA	A N		NA	25.7	AN NA	AN NA	V V	NA		Y S	¥ ž
Zioc	7440-66-6	Daylor Daylor	Į ų	584	31000	AN AN		S N	Т	(4					83				NA NA	4300		AN AN
NOTES:		0	!						1						1							
(0.5-1.5) = designates depth sample was collected below ground surface	d below ground su	rface																				

TABLE 60. 2016 IOOR SOIL ANALYTICAL RESULTS (DETECTIONS ONLY)
FORMER ROBINSON TERMINAL NORTH
500 AND 501 NEWTH UNION STREET
LECKNORTH, UNION STREET

1	ammilto Date:			PSSS T2	TZSCU	T3SCR	(5-1)61-1duim	Minpt-19(4-9)	(C. T. C. I) Day 1 di		(a)	MIHPT-Z1(4.5-5.5)		Mirhpt-21(9-10) Mirhpt-21(24-25)	(5-1)25-1duim (6:		Ì	- N
No.	ample Date:			H	Н		3/7/16	9/7/16	9/8/16	9/8/16	9/9/16	9/9/16	9/3/16	9/9/16	9/9/16	9/9/16	9/9/16	9/9/16
1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1,		6C10GRO	no/ka	+	4		2	4	NA	ΨN	AN	NA	260	<0.12	NA	AM		<0.12
Marie Mari	28)	10C28DRO	ng/kg	Н	i m		2	1	NA	NA	NA	NA	49	<12	NA	NA	71	c12
Marie Mari			- allea	†	+	VIV.	2			9 2	4	VIV	~4000	7	VIV	VIV.	734000	5
Main	200	L	SA/S	t	t	NA OUDDO	2 2		MA	ΔN	V V	ΔN	19000	201	ΔN	VIV		77.
100 110			la/ka		۰	NA 00005	2		AN	Y.	Y.	NA.	8500	<5.2	NA	NA.	15000	5.5
1. 1. 1. 1.	propylbenzene 98	3-82-8	g/kg	t	۰	00000	Ž	+	NA	NA	NA	NA	1900	<5.2	NA	NA		5.5
14 10 10 10 10 10 10 10	thylcyclohexane 10	38-87-2	g/kg		Н	NE NA	Ž	+	NA	NA	NA	NA		<21	NA	NA	200000	22
100 100	ohthalene	T	g/kg	1	+	9000 NA	2	-	NA	NA	NA	NA	ı		NA	NA	46000	<5.5
1.00 1.00	oroethene	Т	gykg.	1	+	9000 NA	2 :		NA:	NA:	W.	NA:	3800		NA:	NA:		2.5
1100 200000 M. <		Т	gy/g		+	00000 NA	2 2		NA.	W S	NA.	NA S	990		NA NA	NA.	40000	0.0
14.00 14.0	-Ayieries		Dy/Gr Dy/Gr	Ť	t	00000	2 2		NA NA	VIV.	NA NA	NA NA	14000		N N	NA NA	10000	- 9
1,100 1,00		ı	6v6r	t	٠	00000	2		VA.	VA.	S.	VAI	001	T	V.	5	T	0.0
14.00 14.0			iaika	t	$^{+}$	AN 0000	2		NA	AN	NA	NA	AN	<200	NA	NA		<210
1500 1500			la/ka	t	۰	AN 00000	Ž		NA.	NA.	Y.	NA	¥	<200	NA	NA		<210
150 25000 M.		Ī.	pa/kg		H	AN 00000	2	4	NA	NA	NA	NA	NA	<200	NA	NA		<210
150 2500 M.	izo(a)anthracene 56		g/kg		_	9000 NA	2	+	NA	NA	NA	NA	NA	<200	NA	NA	NA	<210
1,000, 1,			g/kg		Н	900 NA	2	1	NA	NA	NA	NA	NA	<200	NA	NA		210
1,000 1,00			g/kg		_	9000 NA	Ż	4	NA	NA	NA	NA	NA	<200	ΝΑ	NA		210
1500 1500			g/g	1	+		Ž.		NA	NA	AN	NA	NA	<200	NA.	NA		210
1,000 1,00		Т	g/kg	1	+		Ž.		NA	NA	NA:	NA	NA	<200	NA:	NA		210
CHORD NA			lg/kg	Ť	+		2 2		NA NA	NA NA	NA NA	NA NA	NA NA	2000	NA NA	NA.		210
230000 NA NA <th< td=""><td></td><td>Τ</td><td>DANS.</td><td>t</td><td>٠</td><td></td><td>2 2</td><td></td><td>NA</td><td>VIV</td><td>NA</td><td>NA</td><td>Y V</td><td>2002</td><td>NA</td><td>VIN</td><td></td><td>210</td></th<>		Τ	DANS.	t	٠		2 2		NA	VIV	NA	NA	Y V	2002	NA	VIN		210
1500 1500		T	la/ka	T	٠		2 2		NA.	Q AN	V V	NA	Y AN	2002	NA NA	S AN		210
1114 20000 NA NA <t< td=""><td></td><td>5-73-7</td><td>la/ka</td><td>t</td><td>+</td><td>AN 00000</td><td>2</td><td></td><td>NA.</td><td>Y.</td><td>Y.</td><td>NA.</td><td>¥</td><td><200</td><td>NA.</td><td>NA.</td><td></td><td>210</td></t<>		5-73-7	la/ka	t	+	AN 00000	2		NA.	Y.	Y.	NA.	¥	<200	NA.	NA.		210
144 2000 MA MA MA MA MA MA MA	15.3-c,d)Pyrene	Г	ng/kg	T	۰	9000 NA	2		NA	NA	NA	NA	NA	<200	NA	NA		210
3400 MA			g/kg			9000 NA	Ž	4	NA	NA	NA	NA	NA	<200	NA	NA		210
1,000,000 M. M. M. M. M. M. M.			g/kg	1	-	00000 NA	2	7	NA	NA	NA	NA	NA	<200	NA	NA		210
410 414 414 415		- 1	gykg	1	+	000000 NA	Ž	T	NA	NA	NA	NA	NA	<200	NA	NA		210
1,000 N, N, N, N, N, N, N,	28.8082		natha			VIV.	Ž		Z0 062	VIV	×0.064	080	VIV	VN	70 084	-0 050		VIV
477 470 4800 M. M. 450 M. 429 436 M. M. 449 447 M. 449 M. M. M. M. M. M. M. M	ticides 8081B		P.		ł	S	2		20,000	S	-000	0000	S	C.	100.00	00000		5
1500 1500			g/kg	H	╀	Г	Ž		<5.0	NA	64.9	<4.8	NA	NA	64.9	<4.7		×
NE NA NA C-50 NA C-50 NA NA C-50 NA C-50 NA C-50 NA NA C-50 NA C-50 NA C-50 NA C-50 NA NA C-50 NA C-50 NA N			g/kg		L		Ž	4	<5.0	NA	6.4>	<4.8	NA	NA	<4.9	<4.7		NA
No.			g/kg		Н		Ż	+	<5.0	NA	<4.9	<4.8	NA	NA	<4.9	<4.7		А
NE NE NA NA<																		
8.1 7.5 7.6 1.6 <td></td> <td></td> <td>lg/kg</td> <td>+</td> <td>ų</td> <td>T</td> <td>Ž</td> <td></td> <td>97,</td> <td>NA VA</td> <td>25</td> <td>42</td> <td>NA</td> <td>A.</td> <td><24</td> <td>8</td> <td></td> <td>Ā</td>			lg/kg	+	ų	T	Ž		97,	NA VA	25	42	NA	A.	<24	8		Ā
3.1 4.1 M. 4.0 4.0 M. M. <th< td=""><td></td><td>Т</td><td>odko</td><td>+</td><td></td><td>7.3</td><td>12.4 N</td><td></td><td>0.691</td><td>ΦN</td><td>ΔN</td><td>ΔN</td><td>δN</td><td>VΝ</td><td>ν</td><td>ΦN</td><td></td><td>VΔ</td></th<>		Т	odko	+		7.3	12.4 N		0.691	ΦN	ΔN	ΔN	δN	VΝ	ν	ΦN		VΔ
31 44 MA		Г		+														
34 39 419 440 440 450 NA NA 77 NA NA 626 810 6.27 85 NA 84 NA			ng/kg	F		41 NA	2		13	AN	NA	NA	NA	NA	<2.6	NA		A
7 88 MA NA MA MA </td <td>enic 72</td> <td></td> <td>ng/kg</td> <td></td> <td></td> <td>30</td> <td>130</td> <td></td> <td>480</td> <td>5.8</td> <td>NA</td> <td>1.7</td> <td>Ν</td> <td>NA</td> <td>2500</td> <td>810</td> <td></td> <td>A</td>	enic 72		ng/kg			30	130		480	5.8	NA	1.7	Ν	NA	2500	810		A
9.29	4mium 72	140-43-9	ng/kg				2	1	5.9	NA	NA	NA	NA	NA		NA		A
10	omium 72	140-47-3	ng/kg	_			2	1	21	NA	NA	NA	NA	NA	22	NA		A
270 880 NA N	72 Transfer		ng/kg				Ž	+	1400	NA	NA	NA	NA	NA	25	NA		A
1	72 P		ng/kg				Ž	+	069	NA	NA	NA	NA	NA	69	NA		A
1	y		ng/kg	_	-		Ž	7	3.5	NA	NA	NA	NA	NA	0.26	NA		A
13			ng/kg	+			2		14	NA	NA	NA	NA	ΝΑ		NA		V.
13	anium 7.		ng/kg				2		4.4	NA.	VA	NA	NA	ΑN	<2.6	NA		NA
254 3:100 kV NA	, eer		ng/kg	+	+		2 :			AN.	Y.	Y X	NA:	NA:	<2.6	NA.		۷.
984 31000 NA NA NA NA NA NA NA	v/	Т	ng/kg	_	ł	W.	2 :		ľ	NA:	NA:	NA:	NA:	NA:		NA:		Α.
If all endominant each service was contract before grown furthers Lead professional registers with a contract before grown furthers Lead professional registers with a contract before a contract before a contract before a contract before contract and a contract before	74	140-66-6	ng/kg		-	1000 NA	2	1	2700	NA	NA	NA	₩	NA	79	NA		A
(*) Edge diversion by Machine	-1.5) = designates depth sample was collected be.	low ground surfa	90															
Clidio - general may PH The gradient may be gradient may be gradient method The gradient may be gradient may be gradient method The gradient method method method The gradient method method method The gradient method method method method The gradient method method method method The gradient method	1 = total petroleum hydrocarbons 4-DRO = diesel range TPH																	
s – voldinger composeds - voldinger composeds - voldinger composeds - voldinger composed c	LGRO = gasoline range TPH = Tarret Company list																	
Co. a embrodiente debenyals - A controllente debenyals - A controllente debenyals - To controllente	2s = volatile organic compounds																	
** Priority (Matura List) **To All States Enter List (Matura List) **T	Ocs = semi-VOCs 3s = polychlorinated bipheryls																	
of a visible of the state of th	= Priority Pollutant List																	
of a "militage to kilogens and militages to kilogens	v 8280B = United States Environmental Protection to a nanourams per kilonram	Agency SW-84	3 analytical m	poula														
d = miligrams per kilopgram	g = micrograms per kilogram																	
a my animat	Kg = miligrams per kilogram = not enatored																	

3 of 3

TABLE 7A. ICOR 2013 GROUNDWATER ANALYTICAL RESULTS (DETECTIONS ONLY)

FORMER ROBINSON TERMINAL NORTH 500 AND 501 NORTH UNION STREET ALEXANDRIA, VA

Sample ID:	CAS No.	Units	VDEQ- T3RGSL	VDEQ-	WTNC	VDEQ-CWI		ECS-MWZ		FC3-IMA4	ICOR-3B1(GW)		(200-3B3(344)	ICOR-3B6(GW)		CON-SB/(SW)	(446) age-Vooi		(MS)695-VOOI
						Dermal II Contact & Incidential Ingestion	Inhalation												
Date:								10/08/2013		10/08/2013	10/08/2013	10/	10/08/2013	10/08/2013		10/08/2013	10/08/2013		10/08/2013
TPH EPA 8015																			
PH-GRO		mg/L	NE	NE	NE	NE	NE	2.	.8 <0.1		<0.1		0.25	0.21	7	0.18		11	
-PH-DRO		mg/L	NE	NE	NE	NE	NE	0.91	Н	0.15	0.17		0.30	0.1	1	0.16	0	0.93	0.77
ICL VOCs EPA 8260B																			
Benzene	71-43-2	T/6n	941	1240	1050	863	15	16	30 <1.0		<1.0		49	\$	20	1.7		57	
Syclohexane	110-82-7	ng/L	102	429	9780	N.	3420	150	50 <10		<10	<10		<10	<10			710 <10	
thylbenzene	100-41-4	ng/L	27.6	27.6	3380	1410	61	4			<1.0		15	7.7				80 <1.0	
sopropylbenzene	98-82-8	ng/L	88.7	373	3450	6400	92.5	6.	.7 <1.0		<1.0		3.5	<1.0		1.2	<10	<1.0	
O)	108-87-2	nd/L	17.7	74.5	650	Ä	624	23			<10	<10		<10	<10			520 <10	
Vaphthalene	91-20-3	na/L	3.98	20.1	73.5	557	0.722	73			<1.0		29	2	27 <1.0			Г	
Toluene	108-88-3	na/L	1920	8070	63100	35000	1020	5.			<1.0	<1.0		<1.0				16	
n.p-Xylenes	108-38-3	na/L	71.5	149	1330	5270	21.8	-			<2.0								
	95-47-6	na/L	51.9	207	1830	5870	21.9	2	28 <1.0		<1.0		21	3.	3.2 <1.0		<10	<1.0	
OCS EPA 8270C																			
Acenaphthene	83-32-9	l/on	¥	HZ.	Ä	2870		<11		17	7.2	<5.0		<5.0	<5.0		×11		
Acenaphthylene	208-96-8	na/L	¥	N	¥	1460	¥	<11	<5.0		<5.0			<5.0	<5.0		<11		
Anthracene	120-12-7	na/L	¥	N.	Щ	1660		<11	<5.0		<5.0	<5.0		<5.0	<5.0		<11		
Biphenyl (Diphenyl)	92-52-4	ng/L	3.31	13.9	1800	1160		<11	<5.0		<5.0	<5.0		<5.0	<5.0		<11		
	86-74-8	na/L	¥	N.	W.	¥		<11	<5.0		<5.0	<5.0		<5.0	<5.0		<11		
an	132-64-9	ng/L	¥	N.	¥	47.1		<11	<5.0		<5.0	<5.0		<5.0	<5.0		<11		
	206-44-0	l/on	Щ	¥	HZ.	304		<11	<5.0		<5.0	<5.0		<5.0	<5.0		<11		
	86-73-7	ng/L	¥ ¥	! W	2	4250	빌	<11	3	5.9	<5.0	<5.0		<5.0	<5.0		<11		
ene	91-20-3	ua/L	3.98	20.1	73.5	557			36 <5.0		<5.0	<5.0		8.4	Г		<11		
Phenanthrene	85-01-8	ng/L	뵘	Ä	Ä	1430		<11			<5.0	<5.0					<11		
Pyrene	129-00-0	ng/L	N.	NE	H۷	998	N	<11	<5.0		<5.0	<5.0		<5.0	<5.0		<11		
Total PPL Metals EPA 6020A																			
Antimony	7440-36-0	ng/L	¥	NE	Ä	¥		<5.0	<5.0		<5.0	<5.0		<5.0	<5.0		ΝΑ		
	7440-38-2	ng/L	Ä	NE	Ą	N	NE	6		38	120		480	400		15	ΝΑ		
Beryllium	7440-41-7	ng/L	¥	NE	Ä	Ä	Ä	2	26 <1.0		<1.0		09	1	1.8 <1.0		ΝΑ		
Cadmium	7440-43-9	ng/L	¥	NE	Ą	36	N	3	31 <1.0		13		32	6.7			NA		
Chromium	7440-47-3	T/bn	Ä	NE	NE	26.6	Ä	18	30 <1.0		24		270	3	6	3.7	NA		
Copper	7440-50-8	ng/L	NE	NE	NE	24600	¥	3300			200		2000	190	ō	1.4	ΑN		
Lead	7439-92-1	ng/L	¥	NE	Ä	Ä	Ä	1100	0.0	14	530		610	29	0	3.2	NA		
Aercury	7439-97-6	ng/L	0.067	0.281	5.59	¥	0.895	0.72			0.38			<0.20	<0.20		NA		
Nickel	7440-02-0	ng/L	밀	¥	Ä	4750	Ä	16			38		1500	3		2.9	ΝΑ		
Selenium	7782-49-2	ng/L	Ä	NE	빌	3080	NE	<5.0	<1.0		3.7		5.8	7.	7.6 <1.0		ΝΑ	<1.0	
Silver	7440-22-4	7/6n	NE	NE	NE	469		<1.0	<1.0		3.7	<1.0		<1.0	<1.0		ΝA	<1.0	
Thallium	7440-28-0	ng/L	NE	NE	NE	24.6	¥	1.1			1.0	1.0		<1.0	<1.0		ΑN	<1.0	

TABLE 7A. ICOR 2013 GROUNDWATER ANALYTICAL RESULTS (DETECTIONS ONLY)

FORMER ROBINSON TERMINAL NORTH 500 AND 501 NORTH UNION STREET ALEXANDRIA, VA

Sample ID:	CAS No. Units	Units	VDEQ-	VDEQ-		VDEQ-CWT		ECS-MW2	ECS-MW4	ICOR-SB1(GW)	ICOR-SB5(GW)	ICOR-SB6(GW)	ICOR-SB1(GW) ICOR-SB5(GW) ICOR-SB6(GW) ICOR-SB7(GW) ICOR-SB8(GW) ICOR-SB9(GW)	ICOR-SB8(GW)	ICOR-SB9(GW)
			T3RGSL	T3CGSL	WTNC	WTC	O							•	•
						Dermal Contact &	Inhalation								
						Incidential Ingestion									
Date:								10/08/2013	10/08/2013	10/08/2013	10/08/2013	10/08/2013	10/08/2013	10/08/2013	10/08/2013
Dissolved PPL Metals EPA 6020A															
Arsenic	7440-38-2	ng/L	¥	Ä	Ä	밁	Ä	1.4	<1.0	14	420	38	2.0	NA	25
Beryllium	7440-41-7 ug/L	ng/L	뮏	¥	Ä	Ä	NE	<1.0	<1.0	<1.0	32	<1.0	<1.0	NA	<1.0
Cadmium	7440-43-9	ng/L	IJN.	NE	NE	36	NE	<1.0	<1.0	6.4	39	<1.0	<1.0	NA	<1.0
Chromium	7440-47-3	ng/L	쀨	¥	NE.	26.6	NE	<1.0	<1.0	<1.0	250	<1.0	<1.0	NA	<1.0
Copper	7440-50-8	ng/L	Ä	¥	N	24600	Ä	<1.0	<1.0	52	1000	3.0	<1.0	NA	<1.0
Lead	7439-92-1	ng/L	¥	¥	NE	NE	NE	<1.0	<1.0	2.9	820	<1.0	<1.0	NA	<1.0
Mercury	7439-97-6	ng/L	290'0	0.281	5.59	NE	0.895	<0.20	<0.20	<0.20	0.25	<0.20	<0.20	NA	<0.20
Nickel	7440-02-0	ng/L	¥	뵘	NE	4750	NE	1.5	<1.0	24	1500	3.8	<1.0	NA	3.0
Selenium	7782-49-2	ng/L	IJ.	N.	NE	3080		<1.0	<1.0	1.7	4.3	7.2	<1.0	NA	<1.0
Zinc	7440-66-6	ng/L	Ä	N.	N	220000	NE	130	<20	4200	23000	230	<20	NA	6400
NOTES:															
TPH = total petroleum hydrocarbons															
TPH-DRO = diesel range TPH															
TPH-GRO = gasoline range TPH															
ICL = Larget Compound List															
SVOCs = semi-VOCs															
PCBs = polychlorinated biphenyls PPL = Priority Pollutant List															

EPA &2006 = United States Environmental Protection Agency SW-446 analytical method

ugl. = micrograms per iller

ugl. = micrograms per iller

ugl. = micrograms per iller

VDEG = Commonwealth of Virginia Department of Environmental Quality

VDEG = Commonwealth of Virginia Department of Environmental Quality

VDEG = Commonwealth of Virginia Department of To a construction worker in a trench

VDEG-CWT = VDED = The III commercial groundwealter screening level

VDEG-CWT = VDEG ontaminants of concern for a construction worker in a trench

WTNG = water table contacted above analytical method reporting limit (RL)

End and right justification designates target compound was detected at a concentration above RL

Sellow highlighting designates target compound was detected at a concentration above the VDEQ screening level in at least 1 sample

TABLE 7B. GROUNDWATER ANALYTICAL RESULTS (OBTAINED DURING UST REMOVAL AND INCLUDES COMPARISON TO HISTORICAL DATA)

FORMER ROBINSON TERMINAL NORTH 500 AND 501 NORTH UNION STREET ALEXANDRIA, VA

		, i	י טור קיי		V D L G		ָ בַּבְּ		I EC-MWZ	<u> </u>	EC-MW3		TEC-MW4	_	IEC-IMW3
		T3RGSL	T3CGSL	WTNC	W	WTC	WCS								
					Dermal Contact & Incidential	Inhalation									
Date:					•			5/1/06	3/30/16	5/1/06	3/30/16	5/1/06	3/30/16	5/1/06	3/30/16
TPH 8015															
TPH-DRO	mg/L	Ä	Ä	NE	¥	Ä	Ä	ND	0.29	ΩN	0.13	QN	0.75	QN	<0.12
VOCs 8021B															
Benzene	ng/L	941	941	1050	863	15	NE	ND	<1.0	ΩN	<1.0	QN	<1.0	ΩN	<1.0
Toluene	ng/L	1920	8070	63100	35000	1020	0009	ND	<1.0	ΩN	<1.0	QN	<1.0	ΩN	<1.0
Ethylbenzene	ng/L	27.6	27.6	3380	1410	61	2100	ND	<1.0	QN	<1.0	QN	<1.0	QN	<1.0
m,p-Xylenes	ng/L	71.5	149	1330	5270	21.8	NE	ND	<2.0	ΔN	<2.0	QN	<2.0	ΩN	<2.0
o-Xylenes	ng/L	51.9	207	1830	5870	21.9	NE	ND	<1.0	QN	<1.0	QN	<1.0	ΔN	<1.0
Fotal Xylenes	ng/L	492	2070	5940	11100	87.4	NE	ND	<2.0	ΔN	<2.0	QN	<2.0	ΔN	<2.0
Naphthalene	ng/L	3.98	20.1	73.5	557	0.722	¥	ND	4.9	QN	<1.0	QN	4.3	QN	<1.0
NOTES:															
TPH = total petroleum hydrocarbons															
FPH-DRO = diesel range TPH															
TPH-GRO = gasoline range TPH															
VOCs = volatile organic compounds															
ug/L = micrograms per liter															
mg/L = milligrams per liter															
VDEQ = Commonwealth of Virginia Department of Environmental Quality	ent of Environ	nental Quality													
VDEQ-T3RGSL = VDEQ Tier III residential groundwater screening level	oundwater sci	eening level													
VDEQ-T3CGSL = VDEQ Tier III commercial groundwater screening level	groundwater s	creening level													
VDEQ-CWT = VDEQ contaminants of concern for a construction worker in a trench	rn for a constri	action worker in a	trench												
WTNC = water table not contacted															
WTC = water table contacted															
VDEQ-WQS = VDEQ water quality standards for contaminants of concern for other surface waters	for contamina	ants of concern fo	or other surface v	waters											
ND of <0.12 = not detected above anaytical method reporting limit	nethod reportii	ng limit													
Bold and center justification designates target compound was detected at a concentration above RL	t compound w	as detected at a	concentration ab	ove RL											
Green highlighting designates target compound was detected at a concentration above the RL in at least 1 sample	nd was detect	ed at a concentra	ition above the R	?L in at least 1 s	ample e										

TABLE 70. ICOR 2016 GROUNDWATER ANALYTICAL RESULTS (DETECTIONS ONLY) FORMER ROBINSON TENANAL NORTH BOTH AND STINKENT WORNS STREET ALCANDRA, YA.

		11	11			1	T 1	1		_		,	1	,	_	1	,	_		_	1	1	,	1		_			,	_	,	,	_		,	,	_		1	_													
V(25-28.5)	9									ò																																											
MiHpt-14-GV	9/8/16																																																				
	17	1.2 <0.1	<2.4	<2.4	<10	< 40	1,3 <1.0	7.4 <1.0	<1.0	<10	48 <1.0	5.6 <1.0	45 <20	7.4 <1.0	0.E.O	<5.0		85 <50		2.4 <5.0	25.0	Т	П	9.6	П	6.9 <5.0	П	Ϋ́	QN	ΨN	NA	ž	Т	19 NA	14 NA			12 NA		15000 NA													
MiHpt-14-GW	2/7	Ĥ	¥	Ň	<10		1,4	OL»	41.0	×10	0 77	2	41.0			13 <5.0	<5.0		<0.50		\$20 \$20	?			<5.0			ž	ΝΑ	Т	Z Z	ž	<5.0	П	0.15	<1.0		1 1	000														
W	9/21/16	0.33		NA	<10	<10	1,4	5.4	<1.0	<10	37	5.6	<1.0	4.8	45.0		<5.0	<5.0	<5.0	6.3	<5.0		<5.0	18	<5.0	21 <5.0		Q	NA	77	61>	<1900	<5.0	12	<1.0	<1.0	1200		41.0	16000													
(25-28.5)		0.55				38					7.5																																										
iHpt-10-GW	9/9/16																																																				
W (S		<0.1	П	<2.4	40 <10	<u> </u>	41.0	<1.0	41.0	×10	0.57	<1.0	<1.0	<1.0	0.50	\$20	<5.0	220		<5.0	VEO 020	\$20 \$20	<5.0	\$50 \$50	<5.0	.9 <5.0		ď	ΑN	ΨN	Z Z	Ϋ́	A	NA	g g	NA	V V	Ν	ž ž	Ϋ́													
3-GW(37-40.	9/6/16	0																																																			
MiHpt-08		1.0.1	<2.2	2.2		41.0	<1.0	1.0	1.0	10	1.0	41.0	4.0	1.0	. B.3	6.3	<6.3	6.3	:6.3	:6.3	6.3	:6.3	:6.3	<6.3 <6.3	<6.3	18.3		¥	ΑA	ΨP	W.	V.	4A	4A	¥ \$	ΑA	W.	NA	* *	Α.Α.													
>	2/7/17	0.20	T			ľ					14							16	2					0.51					_	ĺ		_		3.7			2.6			22													
MiHpt-08-GW	1/16	<0.15	AN	NA	<10	010	41.0	V 1.0	21.0	V 10	14	41.0	4.0	41.0	99	\$50	<5.0	40.5	<0.5	<0.5	28.0 VB 0	200	<0.5		<5.0	05.05		¥	NA	VΝ	NA	Ϋ́	<5.0	6.3	0.12	П	5.8	1 1	0.0	21													
	9/21	40.1	NA A	AN	<10	41.0	41.0	41.0 41.0	41.0	Т			4.0		5,00	c5.3	<5.3	Т	Г		C5.33	<5.3	П	V2.3	П	C5.3		Q	QN	917	6.15	<1900	<5.0		41.0				0 0	11													
Mihpt-07-GW	27/17	0.89	ΑN	NA	<10	<10	41.0	210	13	<10	720	2.7	<1.0	38	25.0	220	1 1	78 28	1.2	1.6	7.1	<5.0	<0.50	9.5	<5.0	8.8 <0 F0		V.	AA	ΨN	NA N	ΝΑ	<5.0	7.4	<1.0	1.2	30	<1.0	0.0	73													
MiHpt	9/21/16	2.0	Ш.		c	25	0 .	61	12	2	830	3.7	<1.0	32		0.0		9 %	L	0.	2.0	0	0	8.2	1	2.3				10	19	90	0	7.5	0.0		9.6		0 0	69													
	7117	0.79	П	NA	41	150	41.0	14	4.4	V	250	1.0	Ç 69	38	4,0	200		6,0	Т	<5.0	087	7 8	<5	1.1	<5.0	45		ž	N	U»	<0.15	Ý	92		130 <1.0			2100 <1.0		43000													
MiHpt-05-GV	2 2	0.81	ΨN	Ϋ́	<10	×10	41.0	26	4.5	V 10	70	2.4	41.0	23	0.50	\$20	<5.0	9	<0.50	<0.50	25.0	<5.0	<0.50	22	<5.0	<0.50		ď	ΑN	ΨN	Y Y	Ϋ́	· 20		2 22	70	0 5	00	6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6														
	9/21/16	000	ΑN	Ν	<10	<10	41.0	OLV		<10	407	2 2	<1.0	Ï	45.3	<5.3	<5.3	. 64.3	<5.3	<5.3	<5.3	<5.3	<5.3	<5.3	<5.3	<5.3		Q	QN	e0 19	<0.19	<190	<5.0	5	22 22	2	140	201	4 4	350													
NW4	2/7/17	<0.1 <0.10	NA	4A	:10	11.0	c1.0	1.0	<1.0	010	01.0	<1.0	1.0	1.0	25.0	200	<5.0	0.50	0.50	:0.50	<5.0	5.0	:0.50	0.75	5.0	<0.50		≰	4A	46	NA	Ψ.	<5.0	12	0.0	1.0	10	<1.0	0.0	520													
ECS-MW4	9/21/16				Ì					ò																		Ì			. 6		ĺ	9.1																			
		-0.1 -0.1	ΝA	NA	<10	010	×1.0	×10	<1.0	<10	×1.0	×1.0	410	<1.0	0.5	\$50	<5.0	\$50	<5.0	<5.0	V 5.0	25.0	<5.0	<5.0 <5.0 <5.0	<5.0	<5.0		2	Q	UN.	-0×	<19	<5.0	8.0	71.0			3.8 <1.0	0.00	87 <20													
TEC-MW4	217	<0.1	ΝA	NA	<10	×10 ×1.0	41.0	v.1.0	41.0	v10	<1.0	<1.0	41.0	<1.0	45.0	220	<5.0	0.50	<0.50	<0.50	25.0	220	<0.50	05.05	<5.0	0.50 60.50		ď	AA	₹N	N A	ΑN	<5.0		41.0				0.0														
	9/21/16	<0.1	11.	NA	<10	×10 ×1.0	<1.0	<1.0	41.0	<10	<1.0	41.0	<1.0	41.0	45.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0 <5.0	<5.0	<5.0	<5.0	<5.0	<5.0	è	Q	QN	e0 19	<0.19	<190	<5.0	2.3	0.10	<1.0	<1.0 Re	<1.0	410	<20													
N2	2/7/17	0.18		4	0	0 9	<1.0	0.0	0.1	0.7	0.0	<1.0	<1.0	0.1	0.5	200	0.0	<0.50	200	.50	<5.0 <5.0	0.0	.50	05.0>	0.0	<0.50			8		ra	4	<5.0	8.5	41.0		5.5	2.0	410	250													
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VDEQ- VDEQ-		2 2	H	NE	R	+	H	H	2	+		0009	+	+	+	290	Н	+	t		$^{+}$	$^{+}$		2300 NF		NE VIE	H	1		+	H	Ä	T		w w		Ť	H	f														
		a r	H	NE	N.	2 2	2	t	H	t		Ħ	Z 2	ž	+	t		t	t		+	H	H	2 2		2	Н	1		+		Ä	H		N C		0 2			120													
VDEQ-PDS		15	Ä	15	Ä			A 4.3				43	23	33	+	Z		2 2	H		2	H		2 8	Ш	2 2	Ш			+	Z	+	+		2 2		+		W Z														
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VDEQ-CWT WT Dermal Contact & Incidential Ingestion		N N	Ä	N	1330004	754000	1720	1410	6400	NE	557	35000	52.7	5870	8330	1130	7350	2870	1590	7660	1160	51.2	330	4250	103	1430			Ц	L L	Ä	Ä	NE	NE	38 NE	26.6	24600	4750	3080	220000													least 1 sample
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VDEQ- T3CGSL		N N	NE	NE	941000		35.5	27.6	373	74.5	20.1	8070	2.18	207	un	2 2	NE	2 2	¥	NE	13.9	E E	NE	NE 201	24000000	W W				N.	N N	Ä	NE	NE.	¥ ¥	Ä	¥ 5	NE	W W	NE													proundwater scr
VDEQ- T3RGSL	Ħ	N N	Ä	NE	224000		27.3	۰	Н		H		1.24		un un	¥	NE	2 2	¥	N	3.34	¥ ¥	NE	3 as	2500000	¥ ¥		l		HN.	. N	Ä	NE	NE	W W	R	¥ 2	Ä	W W	NE				Pode	· ·				6			ation above Rt.	ove the VDEO o
	Ħ	:10GRO	Ħ	11664		l			98-82-8			108-88-3			t	t		Ť	l.		4.5	64-9	206-44-0	5-6-6				l	Ħ	2.4	3-00-9	2-5	3-36-0	3-38-2	7440-43-9	3-47-3	7440-50-8	7440-02-0	2-49-2	9-99-0	NULES: TPH = total petroleum hydrocarbons TPH-DRO = deset rance TPH			846 anabiting m	0.00		Justiv	lierel	worker in a trenc	Saminated water	9 Waters	ad at a concentra	cancentration at
Units CAS No.	H	mg/L C6C	ng/L OG	mg/L TPH	ug/L 78-9:	ug/L 67-64-1 ug/L 71-43-2	ug/L 67-66-3				ug/L 91-21		ug/L 79-0			uo/L 120-83-2		ug/L 91-57-6		ug/L 120-12-7	ug/L 92-52-4	\top		ug/L 86-73-7 ug/L 91-20-3	1 1			ng/L	ug/L	1037	ug/L 1918	ug/L 93-6			ug/L /440					Jg/L 744L				ion America CIV.	and desired our	ting limit (RL)	Environmental	Avater screening	a construction v	y setroleum con.	Fresh Cronic ds Other Surface	and wise detects	ample te detected at a c
			(pa.	Ī			ĺ		ĺ						ľ				ľ	_		I	ĺ			Ī		1	ĺ	ľ	ĺ	1	ĺ								9			remarkal Declara-	200	al method report.	we the RL) Decertment of	sidential ground	s of concern for	aroe standard fo	uality Standards Quality Standard	oduso tegat se	o groundwater s.
		-C10)	Total Recover	80.	EK)	I			ne The	ane		9			270C	mol		alene	æ		enyl)				loue			9		51A		204	WO Z								um hydrocarbon. range TPH	ine range TPH pound List	genic compound. ICs	stant List of States Frains	per liter	d above analytics	and detected above	VDEQ Ter III re	EQ contaminant is not contacted	onfacted rai parmit discha	VDEQ Water O. = VDEQ Water	ed Yoafon designah	esignates a dee, designates tarps
Sample ID:	mple Date:	H-GRO (CE	PH 1664 il & Grease (T	H UNICE RORDE	Sutanone (Mit	atone	loroform	Whenzene	propylbenzene	thylcyclohex	phthalene	luene	chloroethene	Vylene Vylene	SL SVOCs 8270C	*Dichlorophe	Chlorophenol	Methylnaphthalene	enaphthylene	uthracene	ohemyl (Diphe	enzofuran	noranthene	nhthalana	ntachlorophe	nenanthrene	CBs 8082	CBs preficielos 9094B	sticides	arbicides 8151A	Samba	CPP	timony	senic	dmium	romium	Jadok	skel	slerium	10	H = total petroleu H-DRO = diesel	H-GRO = gasoti . = Target Comp	ICs = voletile on, OCs = semi-VO.	L = Priority Polit 1,82878 = Linte	L = micrograms	= not detected = not analyzed	50 = Commons	EQ-T3RGSL = 1	EQ.CWT = VDE NC = water table	C = water table FO-PDS = gene.	EQ-WQSFC = 1 EQ-WQSOSW +	and right justifi	e highlighting de tow highlighting u
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1 of 2

TABLE 7C. ICOR 2016 GROUNDWATER ANALYTICAL REBULTS (DETECTIONS ONLY) FORMER ROBINSON TERAINAL NORTH 500 AND 501 NORTH INNON STREET ALEXANDRA, VA.

Sample ID:	Units CAS No.		VDEQ-	VDEQ-	WTNC	EQ-cw I WTC	halation	VDEQ-PDS VDEQ- VDEQ- WQSFC WQSOSW	SFC WQ.		Milhpt-15-6W		Mirhpt-20-6W		Mirhpt-21-6W	Mithpt-21-GW(25-28.5)		Mirhpt-22-6W	MINDE-22-6W(25-20.5)
					J <u></u> =	Contact & Incidential Ingestion													
Sample Date:				H			H	$\ $	H	9/2	21/16 2/7/:	17 9/21/	116 2/7/17	9/21/16	2/7/17	9/9/16	9/21/16	2/7/17	9/9/16
TPH 8015 TPH-GRO (C6-C10) TPH-DRO (C10-C28)	mg/L C	C6C10GRO C10C28DRO	NE NE	N N	NE NE	NE NE	NE NE	15	NE NE	NE <0.10	<0.1	0 0	0.72 0.62	7.5	112	<0.1	0.38	2.3	<0.1
TPH 1664 Oil & Grease (Total Recovered) TPH	mg/L OG_TR mg/L TPH1664	NG TR PH1664	NE NE	NE NE	NE NE	NE NE	NE NE		NE NE	NE NA	NA NA	NA NA	NA NA	NA NA	NA NA	23	NA NA	NA NA	<22 <2.2
TCL VOCs 8260B 2-Butanone (MEK) Acetone	700	7-64-1	224000	1900000 5	6260000	1330000	1660	W W	y w	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	8 8	99	÷ ÷	99 99	<100	40 40 40 40 40	<10 <10	<10 <10 <10	9 9 9
Bertzene Chierdem Cyclohezane Ethybertzene Isopopylbertzene	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	ugit 71-43-2 ugit 67-86-3 ugit 110-82-7 ugit 180-41-4 ugit 88-82-8	941 941 14190 883 15 12 12 12 12 12 12 12 12 12 12 12 12 12	35.5 429 27.6 373	1050 2260 9780 3380 3450	863 1720 NE 1410 6400	15 22.8 3420 61 92.5	4.3 NE	NE 11000 NE NE < NE Z100 < NE NE <	1000 NE <10 100 <1.0	7.7 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10	62 63 41.0 410 41.0	44 13 13 14 14 13 14 14 15 15 15 15 15 15 15 15 15 15 15 15 15		58 59 <10 560 710 150 160 17 15	410 410 410 410	10 1.6	630 16	41.0 41.0 41.0 41.0
Methyl-tanyl ether Methylcyclohexane Naphthalene Tetrachlorcethene	160	634-04-4 08-87-2 1-20-3 27-18-4	4500 17.7 3.98 5.76	19700 74.5 20.1 24.2	443000 650 73.5 292	1690000 NE 557 213	651 624 0.722 10.6	15 NE 8.9	¥ ¥ ¥ ¥	33 KE 410	410	410 410 410	<1.0 <10 <10 <10 <10 <10	\$20	8 8	0.0	41.0 41.0 41.0		4.8 <10 <1.0
Trichloroethene m.p-Xylenes o-Xylene	181 191 191 191	08-38-3 08-38-3 5-47-6	1920 71.5 51.9	207	19.3 1330 1830	52.7 52.7 5270 5870	1020 0.484 21.8 21.9	33 1		000 000 010 NE <2.0	7 2 7 0	470	2.6 41.0 2.0 4.2 42.0 1.1		45 44 10 11 190 240 9.1 11	3000			9.0 4.0 4.0
2,4,5-Trichlorophenol	1,00	20-83-2	2 2	2 2 2	2 2 2	1130	W W	2 2	ا الا الم	NE 65.0	35.0	999	920	3.77	53 19 770 220 7	2 2 4		550	5.0
	1000	3-32-9	2 2 2 2			2870	2 2 2		i mimim 	8 00 00 00 00 00 00 00 00 00 00 00 00 00	40.50		c0.50 6.3 1.7	999	40.50	98 8		<0.50 <0.50 <0.50	550
	1001	20-12-7 2-52-4 5-74-8	NE 3.31 NE	13.9 NE	1800 NE	7660 1160 NE	NE	2 2 2	4 - 4	0000 35 050 35 050	35.0	8 6 8	45.0 45.0 45.0	5 5 5	8.08	2 2 2		<5.0	\$5.0 \$5.0 \$5.0
	1001	32-64-9	222	2 2 2	2 2 2	330	2 2 2	N N N	, in in in	NE 65.0	<0.50		<5.0		<5.0	\$50 \$50 \$50		<5.0	-50 -50
Naphthalene Pentachkrophenol Phenanthrene	ug/L 91-20-3 ug/L 87-86-5 ug/L 85-01-8	7-86-5	3.98 20.1 73.5 550000 2400000 1240000000 NE NE NE	20.1 4000000 12. NE	73.5 400000000 NE	557 0,722 8,9 0 103 962000 NE 1430 NE NE	0.722 962000 NE	8 8 8	NE N	30 00 00 00 00 00 00 00 00 00 00 00 00 0	-0.50 -0.50	1.7 <5.0	13 4.3 4.3 10 1.5	99	35 0.66 4 13 <5.0 <	0.000	\$ 650	<0.50	\$5.0 \$5.0
	, light	29-00-0	N.	¥.	NE	941	Ne Ne	NE	¥	000 <5.0	<0.50 NA	0.65 ND	<0.50 NA	0.65 ON	<0.50 NA	<5.0 NA		<0.50 NA	<5.0
Pesticides 8081B Pesticides Herbicides 8151A	ng).			H		$\parallel \parallel$	$\parallel \parallel$	H	Н	QΝ	NA	QN	NA.	QN	NA	NA		NA Z	NA
2.4.5-TP (Silvex) Dicamba MCPP	ugh 1	ugil. 93-72-1 ugil. 1918-00-9 ugil. 93-65-2	W W W	W W W	W W W	9 9 9 9 8	W W W	# # #	W W W	NE <0.19 NE <0.19	NA NA NA	<0.20 <200	0.63 NA NA	<19 23 85000	N NA N	NA NA	<1.9 <1.9 <1900	NA NA	NA VA
PPL Metals 6020A Antimony Arsenic	ug/L 7	440-36-0	Ä	W W	N N	W W	N N		30 E	340 <5.0		:2:0	<5.0	<5.0	<5.0	AA AA	<5.0	<5.0 h	NA NA
Berylium Cadmium	100 L	440-41-7	밀밀	2 2	W W	98 98	2 2		¥ =	Q 40	13 <1.0	1.0	410	0,0	41.0	A A	<1.0	c1.0	NA VA
Chromium Copper Lead	1001	440-50-8 440-50-8 439-92-1	W W W	W W W	W W W	24600 NE	W W W		9 1	4 NE A	0 0	9	<1.0 12 59 2.0 4.9	41.0	41.0 41.0 41.0	NA NA	1.9	100	NA
Nickel Selenium Thallum	766	ugil 7440-02-0 ugil 7782-49-2 ugil 7440-28-0	W W W	2 2 2 1	W W W	3080 NE NE NE NE 24.6 NE	W W W		20 4600 5 4200 NE 0.47	200	3.4 4 4 4 4 4 4 4 4 4 4	8.0 8.0 2.6 <1.0	41.0	416	6 2.1 1.5 NA 41.0 41.0 41.0 NA	NA NA	2.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1	01000	NA NA
Mills of the second sec							!									<u> </u>			5
10L = mayer compound Lat VOCs = wakte organic compounds SVOCs = semi-VOCs PCBs = polyshormated betweek DCR = December Lateral																			
FPL - Floory Contain Day EPA 82008 - United States Environmental Pr. ugl - miscograms per liter mgl - militagems per liter rg 0 - not detected above moderni method on	roledion Agency	SW-846 analytical	method																
NA = not entity and above analytical interior. NA = not entity and ND = no constituents detected above the RL. VOEC = Commonwealth of Virginis Departments.	ent of Environmen	tal Quality																	
VDEG-1903L = VDEG TRI III reaconing go VDEG-1700SL = VDEG TRI III commercial gi VDEG-077T = VDEG contaminaris of concert WTNC = water table not contacted	roundwater screet groundwater screen for a construction	nng level ering lavel on worker in a trenc	fi																
WTC = water table centracted VDEQ-NDS = general permit discharge stlands VDEQ-WQSFC = VDEQ Water Quality Stands VDEQ-WQSGSW = VDEQ Water Quality Stand	lard for petroleum fands Fresh Croni ndards Other Sur	conteminated water ic face Waters																	
NE = not established Bod and right justification designates target or Blue highlighing designates deep groundwal	compound was de iter sample	sected at a concentr	nation above RL	and and a	and local in all local	4 county													
Green highlighting designates larget compoun Orange highlighting designates larget compoun	nd was detected i and was detected	at a concentration of at a concentration of	bove the VDEQ sur above the VDEQ gr	face water screen cundinates and su	ning level in at leas afface water scream	t 1 sample ning level in at leas	it 1 sample												

TABLE 8. SUB-SLAB SOIL GAS ANALYTICAL RESULTS

FORMER ROBINSON TERMINAL NORTH 500 AND 501 NORTH UNION STREET ALEXANDRIA, VA

Sample ID:	CAS No.	Units	VDEQ-T3RSSG	VDEQ-T3CSSG ICOR-SSG1	ICOR-SSG1	ICOR-SSG2	ICOR-SSG3	ICOR-SSG4
Sample Date:					12/5/16	12/5/16	12/5/16	12/5/16
VOCs TO15								
1,2,4-Trimethylbenzene	92-63-6	ng/m3	24.3	102	6.5	6.3	<25	6.1
2,2,4-Trimethylpentane	540-84-1	ng/m3	Ŋ	IJN.	9.8	6.6	63	11
2-Butanone (MEK)	78-93-3	ng/m3	17400	73000	11	18	<37	16
Acetone	67-64-1	ng/m3	108000	453000	46	260	<240	540
Benzene	71-43-2	mg/m3	333	438	2.4	3.0	<16	4.0
Chloroform	67-66-3	ng/m3	137	178	0.7	<2.4	<24	23
Cyclohexane	110-82-7	mg/m3	20900	87600	1.8	4.9	150	18
Dichlorodifluoromethane	75-71-8	ng/m3	348	1460	3.6	4.9	<25	8.8
Ethylbenzene	100-41-4	ng/m3	374	1640	7.5	6.7	<22	8.0
Propylene	115-07-1	mg/m3	NE	IJN	6.6	8.5	<43	37
Tetrahydrofuran	109-99-9	ng/m3	NE	IJ	22	28	26	29
Toluene	108-88-3	ng/m3	17400	73000	32	43	35	38
m,p-Xylenes	108-38-3	ng/m3	700	1460	27	28	47	29
n-Heptane	142-82-5	ng/m3	NE	NE	2.7	3.4	<20	5.3
o-Xylene	95-47-6	ug/m3	367	1460	14	14	26	15
NOTES.								

VOCs = volatile organic compounds

TO15 = United States Environmental Protection Agency analytical method

ug/m3 = micrograms per meter cubed

<0.86 = not detected above the analytical method reporting limit (RL) Bold and right justification designates constituent was detected above the RL

VDEQ = Commonwealth of Virginia Department of Environmental Quality

VDEQ-T3RSSG = VDEQ Tier III Residential Land use Sub-Slab Soil Gas Screening Level for Inhalation of Indoor Air

VDEQ-T3CSSG = VDEQ Tier III Commercial Land use Sub-Slab Soil Gas Screening Level for Inhalation of Indoor Air

NE = not established

Bold and center justification designates target compound was detected at a concentration above RL Yellow highlighting designates target compound was detected at a concentration above the VDEQ screening level in at least 1 sample

TABLE 9. DEEP SOIL GAS ANALYTICAL RESULTS

FORMER ROBINSON TERMINAL NORTH 500 AND 501 NORTH UNION STREET ALEXANDRIA, VA

Sample ID:	CAS No.	Units	VDEQ-T3RDSG	VDEQ-T3CDSG	VDEQ-T3CW	ICOR-DSG1	ICOR-DSG2	ICOR-DSG3	ICOR-DSG4
Sample Date:						12/5/16	12/5/16	12/5/16	12/5/16
Depth Collected (feet bgs):						6 - 6.5	5 - 5.5	3.5 - 4	2 - 2.5
VOCs TO15									
1,2,4-Trimethylbenzene	9-63-6	ng/m3	73	307	440000	7.7	8.2	4.8	<25
1,3,5-Trimethylbenzene	108-67-8	ng/m3	J.	N.	44300	<2.5	2.9	<2.5	<25
2,2,4-Trimethylpentane	540-84-1	ng/m3	JN.	Ν̈́	Ŋ	490	4.0	11	400
2-Butanone (MEK)	78-93-3	ng/m3	52100	219000	14600000	<3.7	9.5	4.1	180
4-Methyl-2-Pentanone	108-10-1	ng/m3	31300	131000	11500000	<5.1	<5.1	<5.1	300
Acetone	67-64-1	ng/m3	323000	1360000	78100000	9	43	30	19000
Benzene	71-43-2	ng/m3	1000	1310	238000	18	130	5.4	<16
Carbon Disulfide	75-15-0	ng/m3	7300	30700	1750000	9/	53	<31	<310
Chloroethane	75-00-3	ng/m3	104000	438000	1030000	<1.3	<1.3	1.5	<13
Chloroform	67-66-3	ng/m3	410	533	340000	6'9	17	2.5	<24
Cyclohexane	110-82-7	ng/m3	62600	263000	00000009	190	89	23	320
Ethylbenzene	100-41-4	ng/m3	1120	4910	10900000	7.2	2.7	2.8	<22
Naphthalene	91-20-3	ng/m3	31.3	131	13200	6.7	<2.6	<2.6	<26
Propylene	115-07-1	ng/m3	NE	NE	NE	450	640	028	009
Toluene	108-88-3	ng/m3	52100	219000	17100000	20	8.1	18	22
m,p-Xylenes	108-38-3	ng/m3	2100	4380	390000	22	11	21	<43
n-Heptane	142-82-5	ng/m3	NE	NE	NE	20	9.6	9'8	130
n-Hexane	110-54-3	ng/m3	7300	30700	2990000	100	<35	<32	640
n-Propylbenzene	103-65-1	ng/m3	10400	43800	4430000	2.5	<2.5	<2.5	<25
o-Xylene	95-47-6	ng/m3	1100	4380	387000	13	7.5	12	<22
NOTES.									

bgs = below ground surface

VOCs = volatile organic compounds

TO15 = United States Environmental Protection Agency analytical method

ug/m3 = micrograms per meter cubed

ug/m3 = micrograms per meter cubed

ug/m3 = micrograms per meter cubed

ug/m6 = not detected above the analytical method reporting limit (RL)

Bold and right justification designates constituent was detected above the RL

VDEQ = Commonwealth of Virginia Department of Environmental Quality

VDEQ - Commonwealth of Virginia Department of Environmental Quality

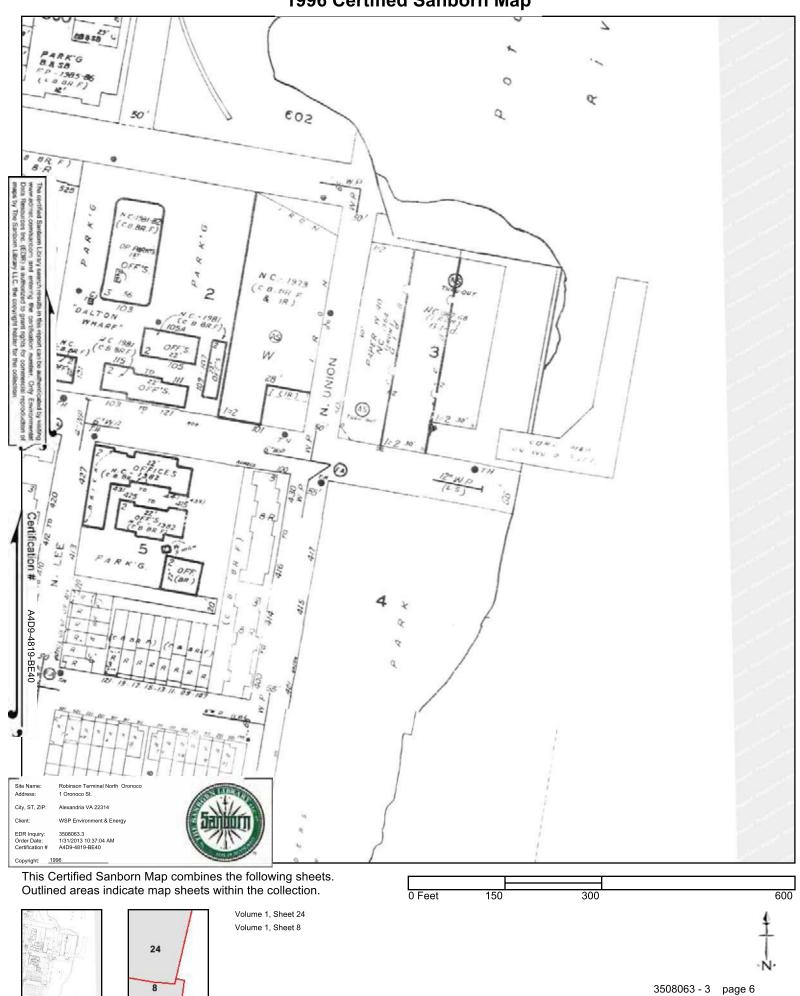
VDEQ-T3RDSG = VDEQ Tier III residential land use Deep Soil Gas Screening Level for Inhalation of Indoor Air

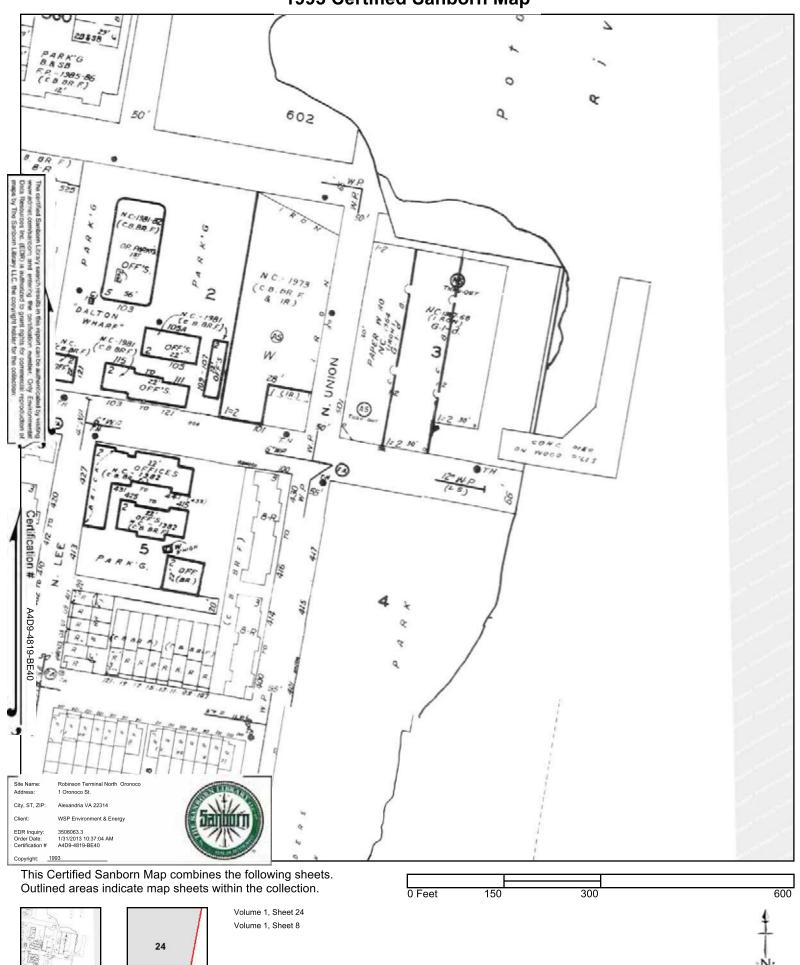
VDEQ-T3CDSG = VDEQ Tier III Commercial land use Deep Soil Gas Screening Level for Inhalation of Air in a Trench

NE = not established

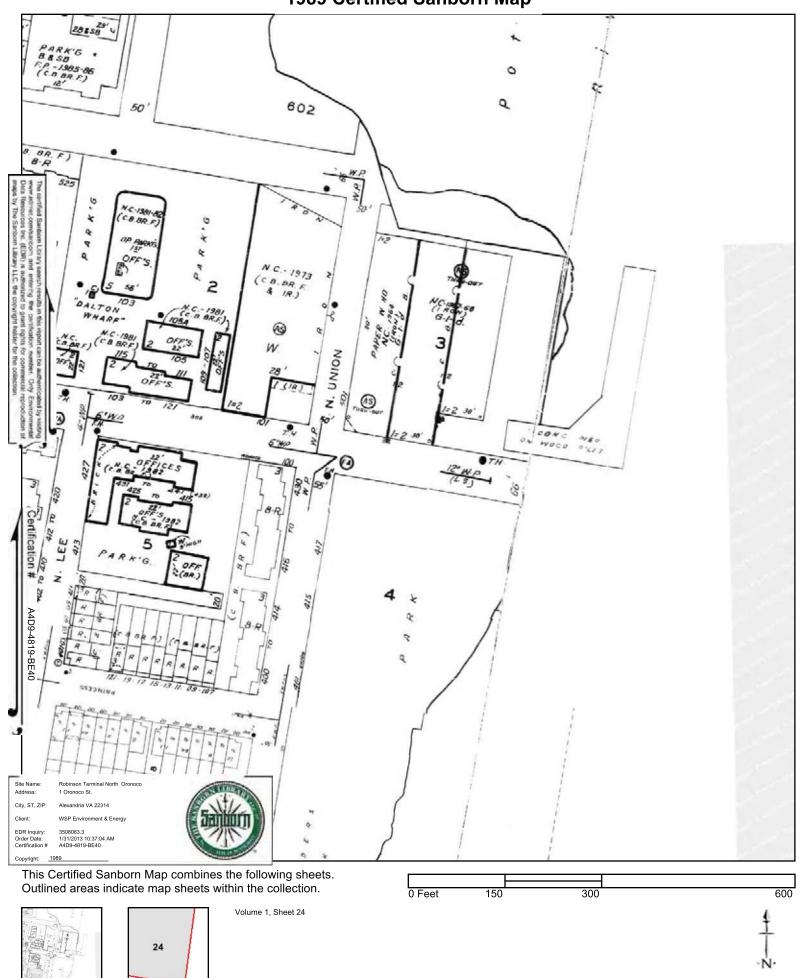
Bold and center justification designates target compound was detected at a concentration above RL Yellow highlighting designates target compound was detected at a concentration above the VDEQ screening level in at least 1 sample

ATTACHMENT 1 HISTORIC MAPS DEPICTING SITE AND SURROUNDING AREA PROPERTY USE

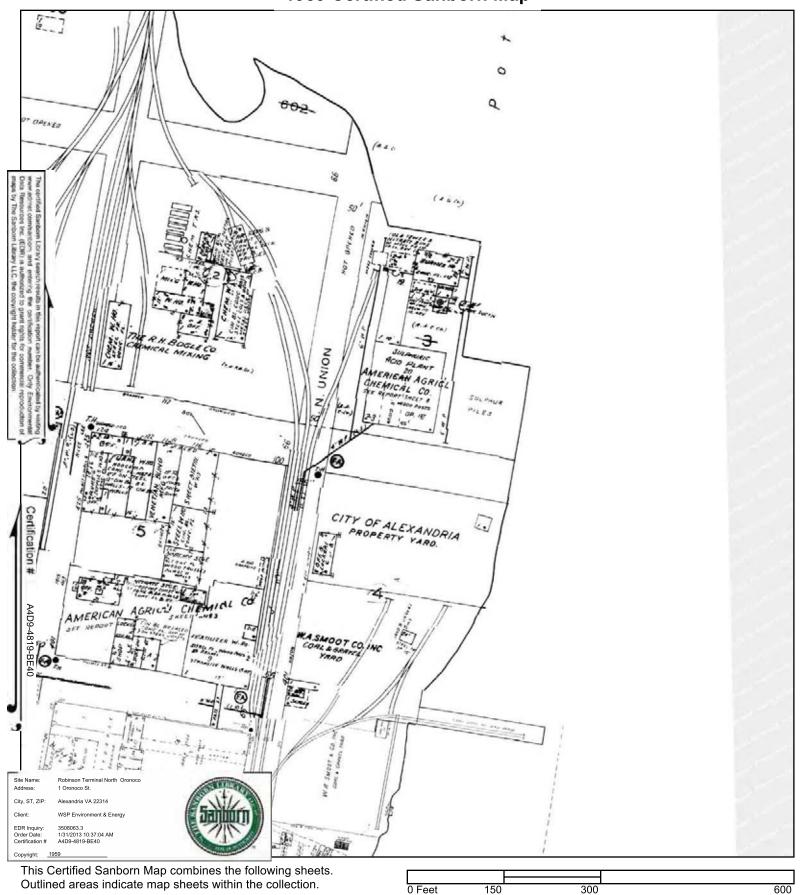




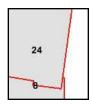
3508063 - 3 page 7



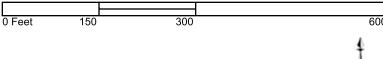
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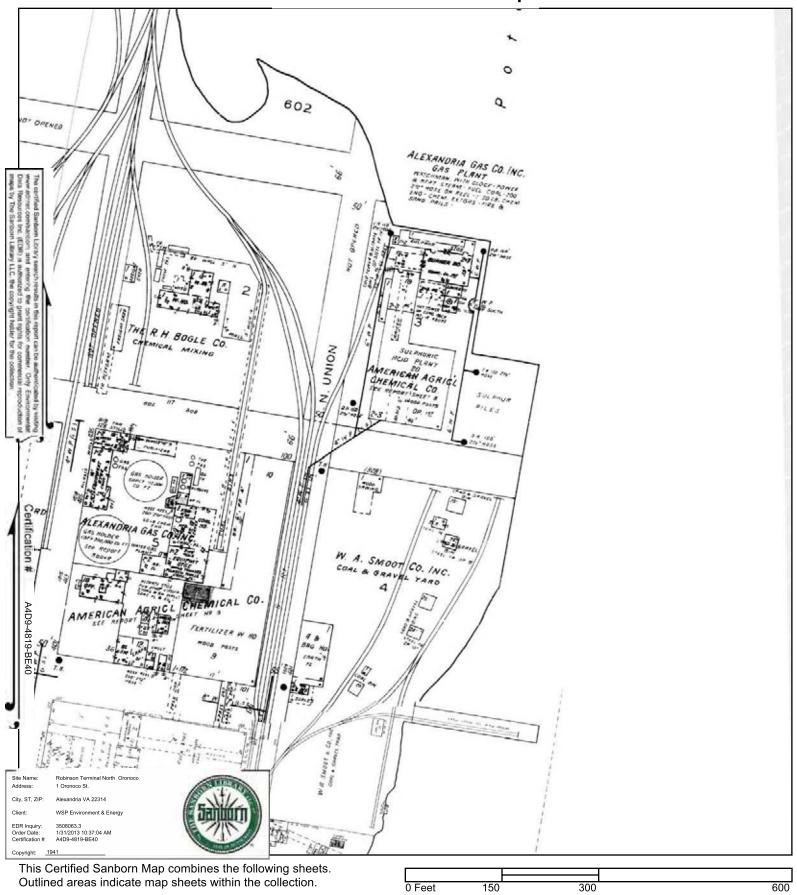




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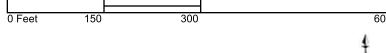




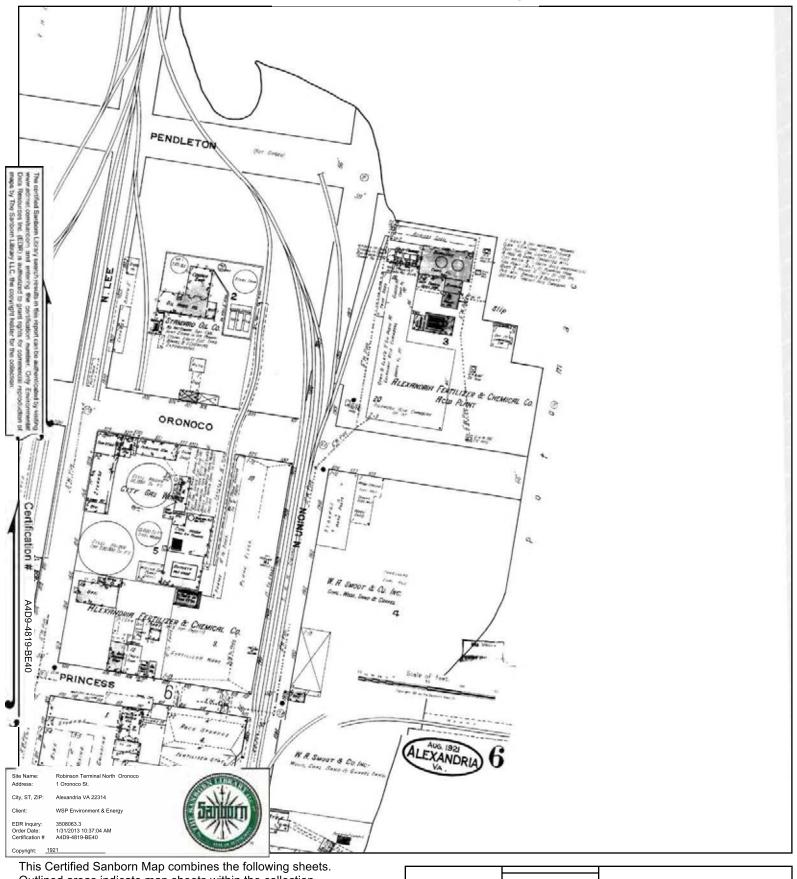


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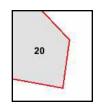


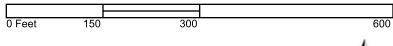




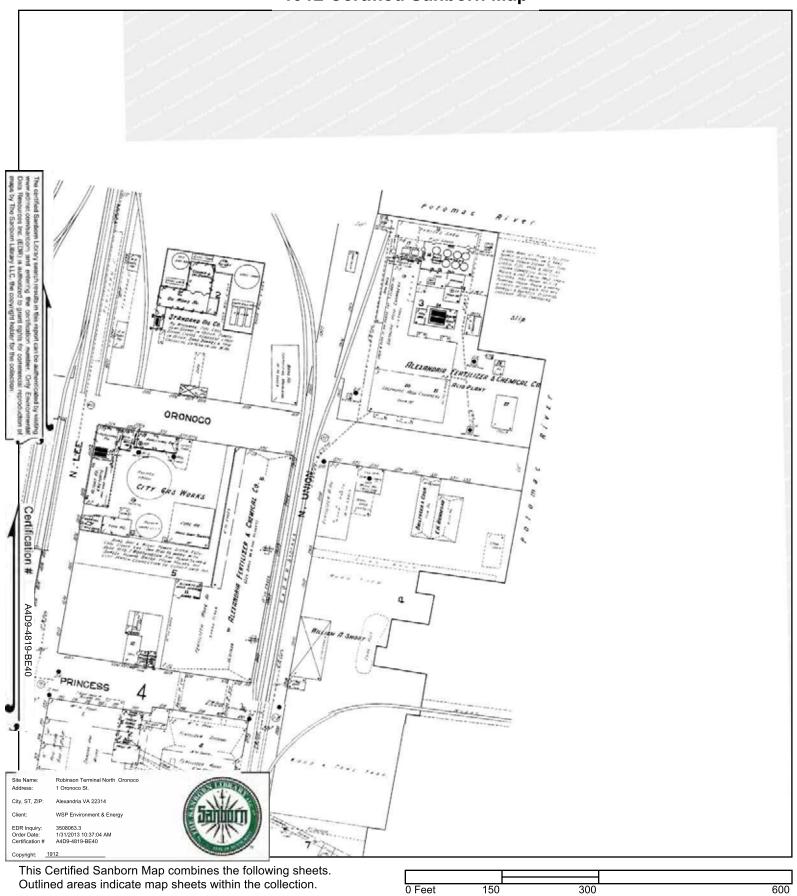
Outlined areas indicate map sheets within the collection.







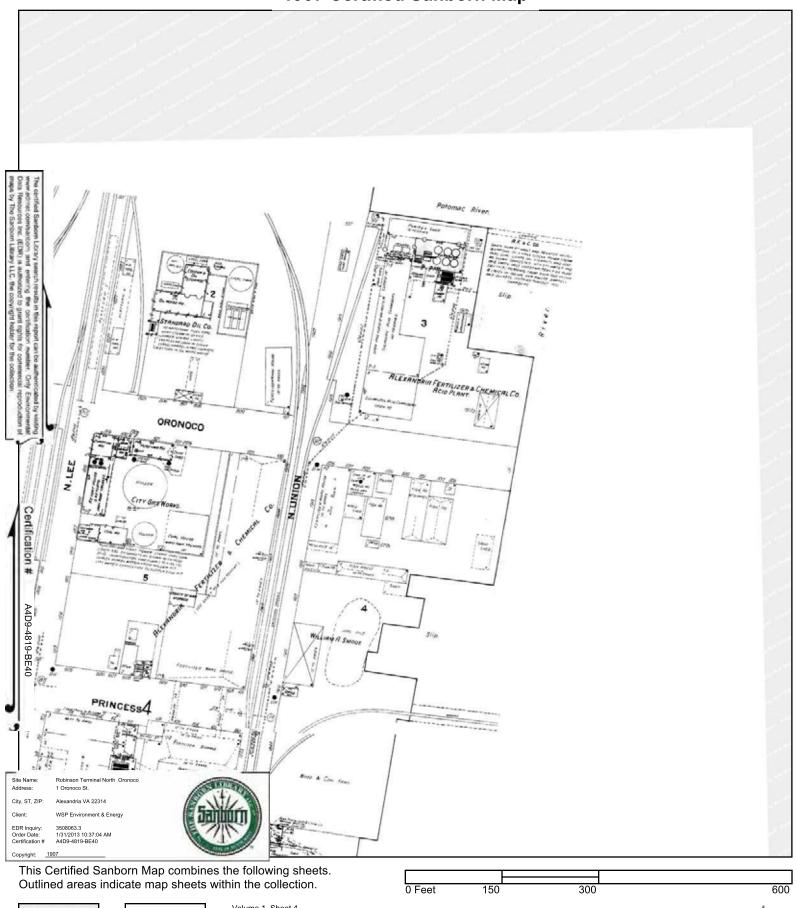




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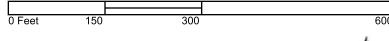
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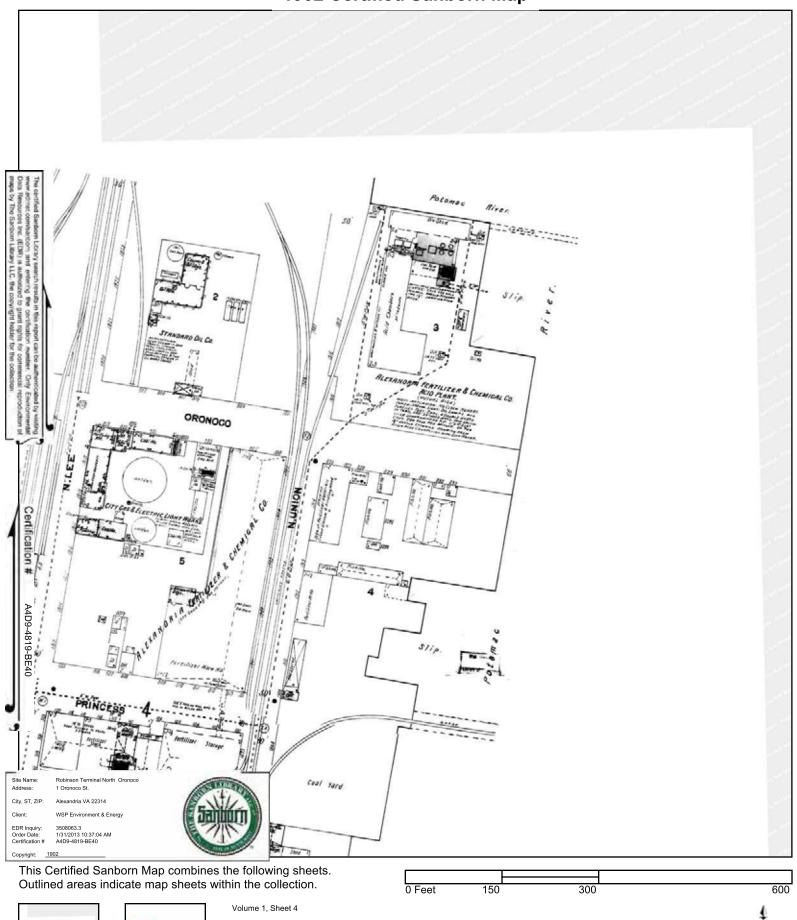




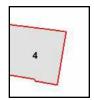


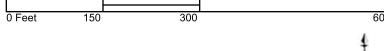




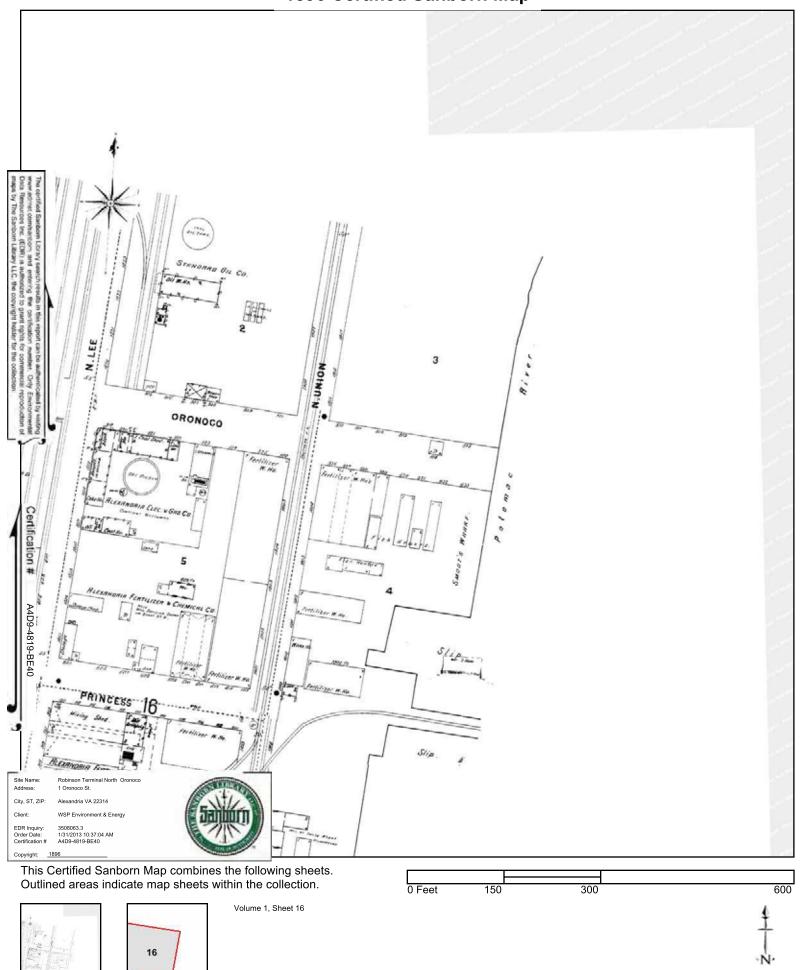




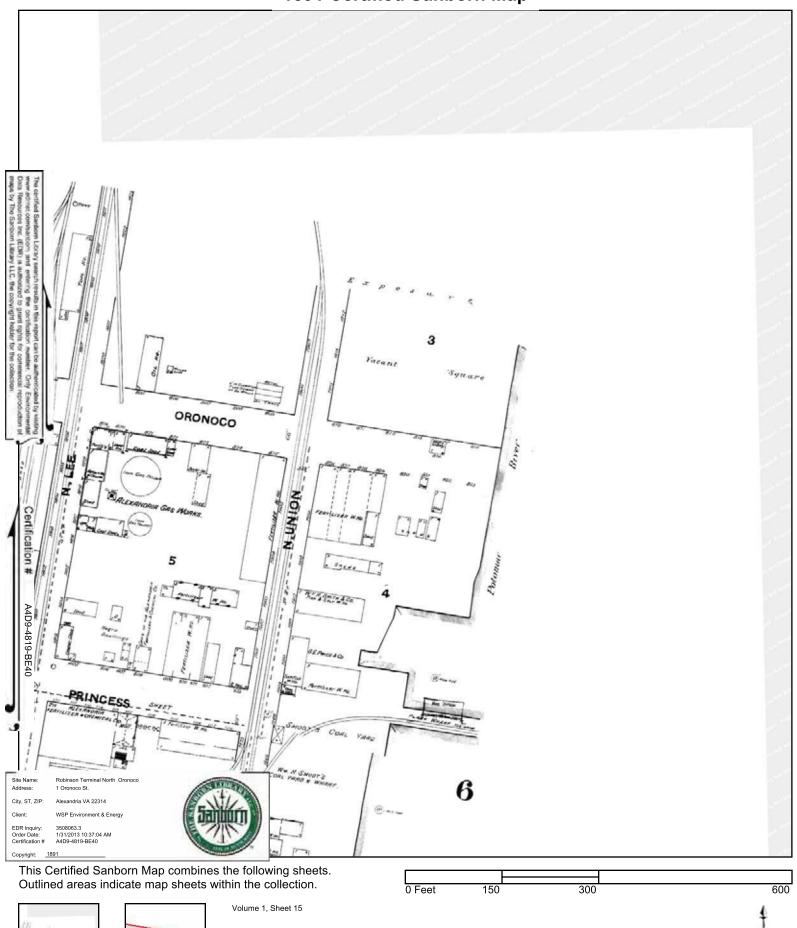






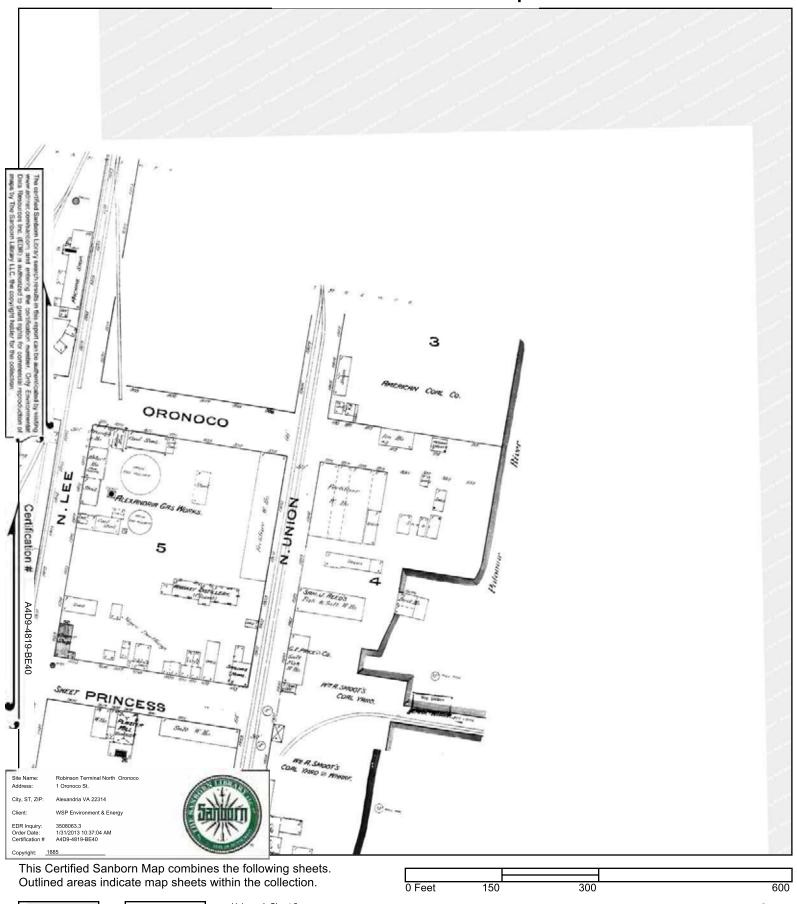


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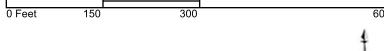
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ATTACHMENT 2 PHOTO-DOCUMENTATION OF RECENT FIELD ACTIVITIES



View of direct-push sampling rig during advancement of test boring.



View of direct-push sampling rig during advancement of test boring.



View of coring machine used to core a hole through concrete floor within warehouses.



View of direct-push sampling rig during advancement of test boring ICOR-SB12.



View of sample cores generated during advancement of test boring.



View of soil samples collected for laboratory analysis from sample cores.



View of oil-stained soil encountered during advancement of test boring ICOR-SB3.



View of intermixed cinder and brick encountered during advancement of test boring ICOR-SB12.



View of soil being screened with a PID.



View of temporary well.



View of existing well ECS-MW2.



View of groundwater sample being collected from temporary well installed at location ICOR-SB3.



View of dissolved metals groundwater sample being filtered during collection.



View of concrete being cored with direct-push sampling rig.



View of real-time tooling being advanced with directpush rig.



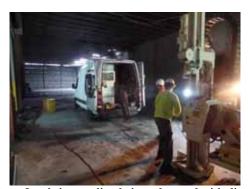
View of real-time tooling advanced with direct-push rig.



View of analytical equipment used to collect data during advancement of real-time tooling.



View of real-time tooling being advanced with directpush rig.



View of real-time tooling being advanced with directpush rig.



View of analytical equipment used to collect data during advancement of real-time tooling.



View of direct-push sampling rig during advancement of test boring to collect soil sample.



View of deep groundwater sample being collected from direct-push tooling (discrete sampler).



View of sand and gravel deep groundwater beraing unit encountered at boring location MiHpt-14.



View of sand and gravel deep groundwater beraing unit encountered at boring location MiHpt-21.



View of permanent well being installed.



View of test borings being tremie grouted.



View of Cox and Colvin VaporPin used to collect subslab soil gas sample.



View of succesfully installed Cox and Colvin VaporPin used to collect sub-slab soil gas sample.



View of deep soil gas sample point.



View of deep soil gas sample point being installed through direct-push tooling.



View of purge pump used to purge deep soil gas sampling points prior to sample collection.



View of Summa canister used to collect sub-slab and deep soil gas sample.

ATTACHMENT 3 BORING LOGS

TOTAL ENVIRONMENTAL CONCEPTS, INC.

TEC/PC	#: 650.002	2/06-313	1	Site: Robinson Terminal	Boring No.:	B-1
City, Sta	ate: Ale	xandria,	VA	Client: Robinson Terminal Warehouse Corp.	Date:	4-27-2006
Site Ged	ologist: A	. Weath	erly	Sample Type: 4-ft poly tube	Total Depth	: 14'
Depth (feet)	Sample Interval (feet)	uscs	PID (ppm)	Lithologic Description		Comments
0				Topsoil		
-0.6		FILL		Brown Sandy Gravel FILL, dry		
-2.1	2-4'	,	0.0	Brown Sandy Clay FILL, with gravel,	moist	
-3.1				Tan Rock FILL, dry		
-3.6			-	Brown Lean Clay FILL, with gravel a	nd some sand,	
5	5-6'		0.0	moist		
-6.1	6-8'		0.0	Brown Lean Clay FILL, moist		·
-			-			With sand below 8'
-9.6				Light Brown Fat Clay FILL, moist		VVICTI SELLE DETOTA O
10.6				Brown Lean Clay FILL, with some sa	ind, moist	
_	11-12'		0.0			
-12	12-14'		0.0	Black Gravel FILL, with sand		No petroleum odor
-13				Brown Lean Clay FILL, with sand		
-14				Bottom of Boring at 14'		
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Total Environmental Concepts, Inc.

DIDECT-DUSHI OG

TEC/PC	#: 650.002	2/06-313	1	Site:	Robinson Terminal	Boring	No.:	B-2/MW-2
City, St	ate: Ale	xandria,	VA	Client: Robinson Terminal Date: Warehouse Corp.		,	4-27-2006	
Site Ge	ologist: A	. Weath	erly	Sample	Type: 4-ft poly tube	Total D	epth:	16'
Depth (feet)	Sample Interval (feet)	USCS	PID (ppm)		Lithologic Description	on		Comments
0				Topsoil				
-0.6		FILL			andy Gravel FILL, dry			
-4	2-4'		0.0	Brown S	andy Clay FILL, with gra	vel, moist		
-							1	
			<u> </u>					
5	<u> </u>		 	<u> </u>			- 	
-6	6-8'	 	0.0	Tan Roc	k FILL, dry		 	· · · · · · · · · · · · · · · · · · ·
- 7	0-0	 	0,0		ean Clay FILL, moist			
-7.2	 		 		Gravel FILL, moist			
-7.4		 			andy Clay FILL, with gra	vel moist		
-8					ean Clay FILL, moist	, , , , , , , , , , , , , , , , , , ,	- 	
-9.11					ILL, moist		- 	
10	10-12'		0.0		ean Clay FILL, moist			
-					· ·		Fat	clay below 10.6'
-							Lea	n clay with sand
-								elow 11'
-12				Red Brid	k FILL, dry			
-12.2					and FILL, with clay, moi	st		
-							Wit	h gravel below 14'
15.6	15-16'	SP	0.0	Grey Po	orly Graded SAND, wet		No	petroleum odor
_				Bottom o	of Boring at 16'			
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Total Environmental Concepts, Inc.

TEC/P	TEC/PC#: 650.002/06-3131		31	Site: Robinson Terminal	Boring No.:	B-3
City, S	tate: Ale	exandria	, VA	Client: Robinson Terminal Date: Warehouse Corp.		4-27-2006
Site Ge	eologist:	A. Weat	herly	Sample Type: 4-ft poly tube	Total Depth	n: 12'
Depth (feet)	Sample Interval (feet)	USCS	PID (ppm)	Lithologic Description		Comments
-0				Topsoil		
-0.6 -	0-4'	FILL	0.0	Brown Sandy Gravel FILL, dry		
5 -6			 	Brown Lean Clay FILL, with sand, mo	ist	
-7.10	7-8'		0.0	Brown Fat Clay FILL, moist		
•						Light brown below 8'
10		·		Brown Sand FILL, with quartz fragme	nts, moist	
-10.2				Brown Lean Clay FILL, moist		
-						Fat clay below 10.8'
-11.6	11-12'		0.0	Light Brown Lean Clay FILL, with som	e sand,	
-				moist Bottom of Boring at 12'		
15		 		Bottom of Boring at 12	<u> </u>	
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TOTAL ENVIRONMENTAL CONCEPTS, INC.

DIDECT-DUSH LOG

TEC/PC	#: 650.002	2/06-313	1	Site: Robinson Terminal	Boring No.:	B-4/MW-4
City, St	ate: Ale	xandria,	VA		Date:	4-27-2006
Site Ge	ologist: A	. Weath	erly	Sample Type: 4-ft poly tube Total Depth		12'
Depth (feet)	Sample Interval (feet)	uscs	PID (ppm)	Lithologic Description		Comments
0				Topsoil		
-0.6		FILL		Brown Sandy Gravel FILL, dry		
	2-4'		0.0			
-3.9				Brown Lean Clay FILL, with sand and g	ravel, moist	
-4	· ·			Brown Gravel FILL, moist		
5.6		<u>. </u>		Brown Fat Clay FILL, moist	···	
-6.10				Brown Crushed Rock FILL, moist		
-7	7-8'		0.0	Brown Fat Clay FILL, moist		
-						Lean clay below 8'
-8.6				Brown Sand FILL, with quartz fragment	s, moist	
-9	9-10'		1.4	Brown Fat Clay FILL, moist		No petroleum odor
10		•				
-	11-12'		0.0			
-				Bottom of Boring at 12'		
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TEC/PC	#: 650.002	2/06-313	1	Site: Robinson Terminal	Boring No.:	B-5
City, Sta	ate: Ale	xandria,	VA	Client: Robinson Terminal Date: Warehouse Corp.		4-27-2006
Site Geo	ologist: A	. Weath	erly	Sample Type: 4-ft poly tube	Total Depth:	12'
Depth (feet)	Sample Interval (feet)	uscs	PID (ppm)	Lithologic Descriptio	n	Comments
0		FILL		Grey Gravel FILL, dry		
-0.6				Brown Sandy Gravel FILL, dry		
-	2-4'	_	0.0	·		
-3.8				Grey Rock FILL, dry		•
-			-			
5			,			
_						
-7	7-8'		0.0	Brown Lean Clay FILL, with gravel,	moist	
-7.6				Brown Fat Clay FILL, moist		
-7.9				Crushed Rock FILL, moist		
-						Water at 8'
10				Brown Sand FILL, with gravel, wet		
-	11-12'		0.0			····
				Bottom of Boring at 12'		
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Total Environmental Concepts, Inc.

TEC/PC	#: 650.002	2/06-313	1	Site: Robinson Terminal	Boring No.	: B-6/MW-7
City, St	ate: Ale	xandria,	VA	Client: Robinson Terminal Date: Warehouse Corp.		4-27-2006
Site Ge	ologist: A	. Weath	erly	Sample Type: 4-ft poly tube Total Dep		n: 12'
Depth (feet)	Sample Interval (feet)	uscs	PID (ppm)	Lithologic Description		Comments
0	· ·	FILL		Grey Gravel FILL, dry		
-0.6				Brown Sandy Clay FILL, with gravel, o	iry	
	2-4'	<u> </u>	0.0			
-3			<u></u>	Brown Fat Clay FILL, with sand, moist	<u> </u>	
. •••						
5						
-	6.6-7.6'		0.0			Slight petroleum odor
-						below 6-6'
						With sand below 8'
-9			<u> </u>	Brown Sandy Clay FILL, moist .		
10						
	11-12'		0.8			
-			}	Bottom of Boring at 12'		Water at 12'
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TOTAL ENVIRONMENTAL CONCEPTS, INC.

TEC/PC	#: 650.002	2/06-313	11	Site: Robinson Terminal	Boring No.:	B-7
City, St	a te: Ale	xandria,	VA	Client: Robinson Terminal Warehouse Corp.	Date:	4-27-2006
Site Ge	ologist: A	. Weath	erly	Sample Type: 4-ft poly tube	Total Depth	12'
Depth (feet)	Sample Interval (feet)	USCS	PID (ppm)	Lithologic Description	1	Comments
Q		FILL		Gravel FILL, dry		
_						
-2	2-4'		0.0	Brown Fat Clay FILL, moist		
-2.6				Brown Well Graded Sand FILL, with	gravel, moist	
-2.9				Brown Fat Clay FILL, moist		·
5						
-	6-8'		0.0			
-						
					·	Lean clay below 9'
10	10-12'		0.0	·		
			<u> </u>	Pottom of Paring at 12		Water at 12'
-			 -	Bottom of Boring at 12'		vvaler at 12
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Total Environmental Concepts, Inc.

DIDECT-DUSH LOG

TEC/PC	#: 650.002	2/06-313	1	Site: Robinson Terminal	Boring No.:	B-8
City, St	ate: Ale	xandria,	VA	Client: Robinson Terminal Date: Warehouse Corp.		4-27-2006
Site Ge	ologist: A	. Weath	erly	Sample Type: 4-ft poly tube Total Depti		12'
Depth (feet)	Sample Interval (feet)	USCS	PID (ppm)	Lithologic Description		Comments
0				Concrete		
-			<u></u>			
-2	2-4'		0.0	Brown Well Graded Sand FILL, moist		
-3				Brown Fat Clay FILL, moist		
-				z z		
5				Grey Sandy Lean Clay FILL, moist		No petroleum odor
-	<u> </u>		<u> </u>			
-7	7-8'		1.0	Brown Lean Clay FILL, moist		
-7.8_				Red Brick FILL, dry		
-7.10			ļ	Brown Fat Clay FILL, moist		
-						Lean clay below 8'
-	40.40	·				· · · · · · · · · · · · · · · · · · ·
10	10-12'		0.0			· · · · · · · · · · · · · · · · · · ·
-	<u> </u>		ļ	Bottom of Boring at 12'		
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TOTAL ENVIRONMENTAL CONCEPTS, INC.

TEC/PC	#: 650.002	2/06-313	31	Site:	Robinson Terr	minal	Boring	J No.:	B-9/MW-5
City, St	ate: Ale	xandria,	VA	Client: Wareho	Robinson Teri ouse Corp.	minal	Date:		4-27-2006
Site Ge	ologist: A	. Weath	erly	Sample	Sample Type: 4-ft poly tube Total		Total	Depth:	16'
Depth (feet)	Sample Interval (feet)	USCS	PID (ppm)		Lithologic De	escription		Comments	
0				Topsoil					
-0.6		FILL		Brown	Sandy Clay FILL,	with gravel,	moist		•
	2-4'		0.0						
-3				Brown	Fat Clay FILL, me	oist			
						····································			
5	5-7'		0.0						
.=									y below 6.6'
									below 7'
-									
	· · · · · · · · · · · · · · · · · · ·							·	
10	· · ·			<u> </u>		<u> </u>			
	11-12'	ļ ·	1.3					Lean cla	ay below 11.3'
-12	12-14'	<u> </u>	49.2	Grey Lo	ean Clay FILL, w	th some sar	id, moist		· · · · · · · · · · · · · · · · · · ·
									te petroleum odor
-	 					<u> </u>		at 13'	· · · · · · · · · · · · · · · · · · ·
15	15-16'		0.0	Bottom	of Boring at 16'				<u> </u>
	10-10		0.0	Dottom	of pointing at 10				
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TOTAL ENVIRONMENTAL CONCEPTS, INC.

TEC/PC	#: 650.002	2/06-313	1	Site: Robinson Terminal	Boring No.:	B-10
City, Sta	ite: Ale	xandria,	VA ·	Client: Robinson Terminal Warehouse Corp.	Date:	4-27-2006
Site Ged	ologist: A	. Weath	erly	Sample Type: 4-ft poly tube	Total Depth:	12'
Depth (feet)	Sample Intervai (feet)	USCS	PID (ppm)	Lithologic Description	Comments	
0				Topsoil		1
-0.6		FILL		Brown Sandy Gravel FILL, dry		
·· •	2-4'		0.0			
-						
-4				Brown Fat Clay FILL, moist		
5	,					
-	6-8'		0.0	i	·	
-						
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10						
-11.6	11-12'		0.2	Brown Lean Clay FILL, with sand, mo	st	
-		-		Bottom of Boring at 12'		
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Total Environmental Concepts, Inc.

TEC/PC	#: 650.002	2/06-313	1	Site:	Robinson Terminal	Boring No.:	B-11
City, St	ate: Ale	xandria,	VA	Client: Robinson Terminal Date: Warehouse Corp.		4-28-2006	
Site Ge	ologist: A	. Weath	erly	Sample Type: 4-ft poly tube Total Depth		Total Depth:	: 12'
Depth (feet)	Sample Interval (feet)	uscs	PID (ppm)		Lithologic Descrip	tion	Comments
0		FILL		Concrete			
-							
-2	2-4'		0.0		t Clay FILL, with sand a	ind gravel, moist	<u> </u>
-3.2			<u> </u>		vel FILL, moist	····	
-3.8				<u>. </u>	ndy Clay FILL, with gra		
-4	4-8'		0.0		n Poorly Graded Sand	FILL, moist	
-4.6		j	<u> </u>	Brown Le	an Clay FILL, moist		<u> </u>
5			 				
-6.6			 	Asphalt	o o company		
-7			 	Brown Le	an Clay FILL, moist		<u></u>
-7.10 -8.6					indy Clay FILL, moist d Grey Lean Clay FILL,	moiet	No petroleum odor
-0.0	9-11'		0.0	DIOWII all	d Gley Leat Clay File,	Hoist	No petroleum odor
10			<u> </u>	Red Brick	FILL, dry		
-10.2			 		t Clay FILL, moist	· · · · · · · · · · · · · · · · · · ·	
-					Boring at 12'		
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Total Environmental Concepts, Inc.

TEC/PC	#: 650.002	2/06-313	1	Site: Robinson Terminal	Boring No.:	B-12/MW-1
City, Sta	ate: Ale	xandria,	VA	Client: Robinson Terminal Warehouse Corp.	Date:	4-28-2006
Site Ge	ologist: A	. Weath	erly	Sample Type: 4-ft poly tube	Total Depth:	10'
Depth (feet)	Sample Interval (feet)	uscs	PID (ppm)	Lithologic Description		Comments
0	0-4'		0.0	Topsoil		
-0.8		FILL		Brown Sandy Gravel FILL, dry		
-						
-3.10	-			Brown Sandy Clay FILL, with gravel,	moist	
-4	4-6'		0.0	Brown Fat Clay FILL, moist	,	
5						
-						
-7	7-8'		0.0	Brown Fat Clay FILL, with some san	d, moist	
-8	8-10'		0.0	Dark Grey Gravel FILL, with sand, w	et	No petroleum odor
		 	·			Water at 8'
10		ļ	<u> </u>	Bottom of Boring at 10'		
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TOTAL Environmental Concepts, Inc.

TEC/PC	#: 650.002	2/06-313	31	Site: Robinson Terminal	Boring N	No.: B-13/MW-6		
City, St	ate: Ale	xandria,	VA	Client: Robinson Terminal Warehouse Corp.	4-28-2006			
Site Ge	ologist: A	. Weath	erly	Sample Type: 4-ft poly tube	Total Dep	pth: 16'		
Depth (feet)	Sample Interval (feet)	USCS	PID (ppm)	Lithologic Description	Comments			
0				Topsoil				
-0.6		FILL		Brown Sandy Clay FILL, with gravel	, moist			
-	2-4'		0.0		•			
.=		·						
-4		,		Light Brown Lean Clay FILL, with sa	ınd, moist			
5								
•	6-8'		0.0					
-8				Light Brown Lean Clay FILL, moist				
- .								
10	44.40			•		With some sand and		
•	11-12'		1.4			gravel below 10'		
-								
-	14-16'		0.0					
15	1-4 (0		0.0		<u> </u>			
 10		,		Bottom of Boring at 16'				
				Editori of Dorning at 10				
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REFERENCE NOTES FOR BORING LOGS

I. Drilling and Sampling Symbols:

SS	-	Split Spoon Sampler	RB	-	Rock Bit Drilling
ST	-	Shelby Tube Sampler	BS	_	Bulk Sample of Cuttings
RC	-	Rock Core; NX, BX, AX	PA	-	Power Auger (no sample)
PM	-	Pressuremeter	HSA	-	Hollow Stem Auger
DC	-	Dutch Cone Penetrometer	WS	_	Wash Sample

Standard Penetration Test (SPT) resistance refers to the blows per foot (bpf) of a 140 lb hammer falling 30 inches on a 2 in. O.D. split-spoon sampler as specified in ASTM D-1586. The blow count is commonly referred to as the N-value.

II. Correlation of Penetration Resistances to Soil Properties:

Relative Density-Sands, Silts

Consistency of Cohesive Soils

SPT-N (bpf)	Relative Density	SPT-N (bpf)	Consistency	Unconfined Compressive Strength, Op, tsf
0-5	Very Loose	0-3	Very Soft	Under 0.25
6 - 10	Loose	4 5	Soft	0.25 - 0.49
11 - 30	Medium Dense	6 - 10	Medium Stiff	0.50 - 0.99
31 - 50	Dense	11 - 15	Stiff	1.00 - 1.99
51+	Very Dense	16 - 30	Very Stiff	2.00 - 3.99
	•	31 - 50	Hard	4.00 - 8.00
		51+	Very Hard	Over 8.00

Weathered Rock (WR) may be defined as SPT-N values exceeding 100 bpf depending on site specific conditions. Refer carefully to boring logs.

Rock Fragments, gravel, cobbles, boulders, or debris may produce N-values that are not representative of actual soil properties.

III. Unified Soil Classification Symbols:

GP - Poorly Graded Gravel	ML – Low Plasticity Silts
GW - Well Graded Gravel	MH – High Plasticity Silts
GM – Silty Gravel	CL - Low Plasticity Clays
GC - Clayey Gravels	CH – High Plasticity Clays
SP – Poorly Graded Sands	OL - Low Plasticity Organics
SW - Well Graded Sands	OH – High Plasticity Organics
SM – Silty Sands	CL-ML – Dual Classification (Typical)
SC - Clavey Sands	

IV. Water Level Measurement Symbols:

WL - Water Level	BCR Before Casing Removal
WS - While Sampling	ACR - After Casing Removal
WD - While Drilling	WCI – Wet Cave In
	DCI – Dry Cave In

The water levels are those water levels actually measured in the bore hole at the times indicated by the symbol. The measurements are relatively reliable when augering, without adding fluids, in a granular soil. In clays and plastic silts, the accurate determination of water levels may require several days for the water level to stabilize. In such cases, additional methods of measurement are generally required.

Ma	ajor Divisio	ons	Group		nified Soil Classifica Typical Names	lion 2350	<u> </u>	Laboratory Classification Criteria					
			Symbol	s									
Sieve size)	: fraction is re size)	ravels no fines)	GW	Well-g mixtur	graded gravels, gravel-sand res, little or no fines			$C_u = D_{60}/D_{10}$ greater than 4 $C_c = (D_{30})^2/(D_{10}xD_{60})$ between 1 and 3					
		Clean gravels (Little or no fines)	GP		Poorly graded gravels, gravel-sand mixtures, little or no fines			Not meeting all gradation requirements for GW					
	Gravels [More than half of coarse fraction is larger than No. 4 sieve size)	Gravels with fines (Appreciable amount of fines)	GM ^a	d Silty g	ravels, gravel-sand mixtures	Determine percentage of sand and gravel from grain-size curve. Depending on percentage of fines (fraction smaller than No. 200 sieve size), coarse-grained soils are classified as follows: Less than 5 percent GW, GP, SW, SP More than 15 percent GW, GP, SW, SP		Atterberg limits below "A" line or P.I. less than 4 Above "A" line with P. between 4 and 7 ar borderline cases requiring use of dual symbols					
Coarse-grained soils (More than half of material is larger than No. 200 Sieve size)	(More the	Gravels wi preciable am	GC	Clayey	y gravels, gravel-sand-clay	re. :00 sieve size	abols ^b	Atterberg limits below "A" line or P.I. less than 7					
arger		(Ap)				e curv	al syn	or randomary					
Coarse-grained soils material is larger than	Sands (More than half of coarse fraction is smaller than No. 4 sieve size)	Clean sands ttle or no fines)	SW		Well-graded sands, gravelly sands, little or no fines			$C_u = D_{60}/D_{10}$ greater than 6 $C_c = (D_{30})^2/(D_{10}xD_{60})$ between 1 and 3					
i nalfofi		Clean sands (Little or no fines)	SP		graded sands, gravelly little or no fines	Determine percentage of sand and gravel from grain-size curve. Depending on percentage of fines (fraction smaller than No. 200 sieclassified as follows: Less than 5 percent GW, GP, SW, SP More than 12 percent GM, GC, SM, SC 5 to 12 percent Border 4 line cases requiring dual symbols ^b		Not meeting all gradation requirements for SW					
(More th		es to fines)	SM ^a	d Silty s	ands, sand-silt mixtures	of sand an tage of fine GW, GP,		Atterberg limits above "A" line or P.I. less than 4 Limits plotting in CL-Mi zone with P.I. between 4 and 7 are borderline case requiring use of dua					
		Sands with fines (Appreciable amount o fines)		ນ		Determine percentage Depending on percent classified as follows: Less than 5 percent	cent	symbols					
		Sai (Appreci	SC	Clayey	y sands, saud-clay mixtures	Determine percenta Depending on perce classified as follow: Less than 5 percent	5 to 12 percent	Atterberg limits above "A" line with P.I. greater than 7					
	clays		ML	rock	nic silts and very fine sands, flour, silty or clayey fine or clayey silts with slight ity		<u>.</u>	Plasticity Chart					
200 Sieve)	Silts and cl: (Liquid limit less	CL Inorganic clays of low to medium plasticity, gravelly clays, sandy clays			"A" line								
n No.	(Liqu		OL	Organi of low	ic silts and organic silty clays plasticity	₩ 40		СН					
Fine-grained soils (More than half material is smaller than No. 200 Sieve)	s than 50)		МН	diator	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts			CL CL					
	Silts and clays (Liquid limit greater than 50)	MH Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts CH Inorganic clays of high plasticity, fat clays			MH and OH								
	S (Liquid li		OH		c clays of medium to high ity, organic silts	0		CL-ML ML and OL					
Œ	Highly Organic soils	Organic soils		Peat ar	nd other highly organic soils		0 :	10 20 30 40 50 60 70 80 90 100 Liquid Limit					

a Division of GM and SM groups into subdivisions of d and u are for roads and airfields only. Subdivision is based on Atterberg limits; suffix d used when L.L. is 28 or less; the suffix u used when L.L. is greater than 28.

b Borderline classifications, used for soils possessing characteristics of two groups, are designated by combinations of group symbols. For example: GW-GC, well-graded gravel-sand mixture with clay binder.

From Winterkorn and Fang. 1975.

CLIENT JOB # BORING # SHEET GRAHAM COMPANIES, LTD 13983 OF B-1PROJECT NAME ARCHITECT-ENGINEER ROBINSON TERMINAL AT ALEXANDRIA WATERFRONT CALIBRATED PENETROMETER TONS/FT. 2 SITE LOCATION ALEXANDRIA, VIRGINIA (500 N. UNION STREET) PLASTIC WATER LIQUID LIMIT X CONTENT % LIMIT % DESCRIPTION OF MATERIAL ENGLISH UNITS E 乭 LEVELS E ROCK QUALITY DESIGNATION & RECOVERY E RQD%-- - REC.%-8 pist ELEVATION BOTTOM OF CASING LOSS OF CIRCULATION 100% 20%-40%-60%-80%-100% SAMPLE STANDARD PENETRATION BLOWS/FT. SURFACE ELEVATION 11.80 10 30 50+ 0 Concrete Depth 12" 22 18 18 ⊗.9 1 Gravel Depth 4" -- 10 rojects}\13900-13999\01-13983\b-Drafting\13983BL.dwg, 1/29/2008 10:32:49 AM, ECS Mid-Atlantic, LLC. Chantilly,) nc (n-29-00) Sandy SILT, Some Clay, Trace 2 22 18 18 ⊗30 Brick and Asphalt, Dark Gray, Moist, Very Loose to Medium 5 Dense, (FILL) 3 22 18 14 Ø 5 4 22 18 10 10 SILT, With Fine Sand, Trace Clay and Mica, Brown to Purplish Brown, Moist, Loose to 5 22 18 | 16 Medium Dense, (ML) 5 22 18 | 18 6 20-No Recovery 7 22 18 **⋈**33 0 25 Silty SAND, With Gravel, Trace Quartz, Brown, Moist to Wet, Dense, (SM) 22 18 | 12 8 30 CONTINUED ON NEXT PAGE. THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES IN-SITU THE TRANSITION MAY BE GRADUAL ∑. 8.5° WS OR 1 BORING STARTED 19/2007 ▼WL(BCR) N / A ▼WL(ACR) N / A CAVE IN DEPTH • 17.0' BORING COMPLETED ′19/2007

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RIG T-1

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CLIENT JOB # BORING # SHEET GRAHAM COMPANIES, LTD 13983 OF B-2 2 3 PROJECT NAME ARCHITECT-ENGINEER ROBINSON TERMINAL AT ALEXANDRIA WATERFRONT CALIBRATED PENETROMETER TONS/FT. SITE LOCATION ALEXANDRIA, VIRGINIA (500 N. UNION STREET) PLASTIC LIQUID WATER LIMIT % CONTENT X LIMIT X X-DESCRIPTION OF MATERIAL ENGLISH UNITS Ē E Ê ROCK QUALITY DESIGNATION & RECOVERY Ξ TYPE RQD%-- -- REC.%-Š PIST **ELEVATION** DEPTH BOTTOM OF CASING LOSS OF CIRCULATION 100% 20%-40%-60%--80%--100% SAMPLE STANDARD PENETRATION BLOWS/FT. SURFACE ELEVATION 11.80 20 10 30 GRAVEL, Some Silty Sand, Brown, Wet, Medium Dense to Dense, (GW) 20 22 18 9 8 (⊗)36 35 10 SS 18 10 Silty CLAY, Trace Fine Sand, Brown, Moist, Very Stiff, (CL) 22 11 18 14 **⊗**21 35 22 18 12 16 ∞25 50-22 18 10 13 **⊗**28 55 Marine CLAY, Grayish Brown, Moist, Very Stiff, (CH) 14 22 18 18 60 CONTINUED ON NEXT PAGE. THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETVEEN SOIL TYPES IN-SITU THE TRANSITION MAY BE GRADUAL ⊈wւ8.5' WS OR (11) BORING STARTED 12/20/2007 CAVE IN DEPTH . N/A ₩wl(bcr) N ¥WL(ACR) N / A BORING COMPLETED 12/20/2007 ⊻ա 27.9՝ DRILLING METHOD HSA RIG T -- 1

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JOB # CLIENT BORING # SHEET GRAHAM COMPANIES, LTD 13983 B-23 OF 3 PROJECT NAME ARCHITECT-ENGINEER ROBINSON TERMINAL AT ALEXANDRIA WATERFRONT MID-ATLANTIC CALIBRATED PENETROMETER TONS/FT. 2 SITE LOCATION - ALEXANDRIA, VIRGINIA (500 N. UNION STREET) PLASTIC WATER LIQUID LIMIT X CONTENT % LIMIT % X. DESCRIPTION OF MATERIAL ENGLISH UNITS E E LEVELS E ROCK QUALITY DESIGNATION & RECOVERY 8 RQD%-- -- REC.% Ñ Į. BOTTOM OF CASING - LOSS OF CIRCULATION 100% -40%---50%---80%---100% 20%-SAMPLE STANDARD PENETRATION BLOWS/FT. SURFACE ELEVATION ⊗ 11.80 10 20 30 50+ 60 Marine CLAY, Grayish Brown, Moist, Very Stiff, (CH) 15 SS | 18 18 **⊗**23 16 22 18 18 (⊗) 21 70-17 SS | 18 18 Ø 21 SS | 18 18 18 ⊗26 80. END OF BORING @ 80.00' 90 THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES IN-SITU THE TRANSITION MAY BE GRADUAL ⊈wւ 8.5' WS OR (11) BORING STARTED 12/20/2007 ¥WL(BCR) N / A ¥wl(acr) N ∕ A CAVE IN DEPTH . N/A BORING COMPLETED /2007

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CLIENT JOB # BORING # SHEET OF GRAHAM COMPANIES, LTD 13983 B-3PROJECT NAME ARCHITECT-ENGINEER ROBINSON TERMINAL AT ALEXANDRIA WATERFRONT CALIBRATED PENETROMETER TONS/FT. 2 SITE LOCATION ALEXANDRIA, VIRGINIA (500 N. UNION STREET) PLASTIC WATER LIQUID LIMIT X CONTENT % LIMIT % DESCRIPTION OF MATERIAL ENGLISH UNITS Ê ROCK QUALITY DESIGNATION & RECOVERY E E RQD%-- -- REC.%-Š Dist RLEVATION BOTTOM OF CASING - LOSS OF CIRCULATION 100% 20%-40%-60%-80%---100%-SAMPLE STANDARD PENETRATION BLOWS/FT. SURFACE ELEVATION 9.00 30 30-GRAVEL, With Silty Sand, Brown, Moist to Wet, Dense to Very Dense, (GW) 25 22 18 12 9 **⊗**45 22 18 Ø80 10 14 Marine CLAY, Reddish Brown and Gray, Moist, Very Stiff, (CH) 22 18 16 11 22 ⊗30 12 18 14 50 13 22 18 16 **⊗**34 55 22 18 16 14 (⊗)39 60 END OF BORING @ 60.00' THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES IN-SITU THE TRANSITION MAY BE GRADUAL WS OR 1 Ţ₩1 14.0° BORING STARTED 12/26/2007 ¥wl(bcr) N / A ¥wl(acr) N / A BORING COMPLETED CAVE IN DEPTH 6 ′26/2007 N/A

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CLIENT JOB # BORING # SHEET GRAHAM COMPANIES, LTD 13983 B-4OF 3 PROJECT NAME ARCHITECT-ENGINEER ROBINSON TERMINAL AT ALEXANDRIA WATERFRONT CALIBRATED PENETROMETER TONS/FT. 2 SITE LOCATION ALEXANDRIA, VIRGINIA (500 N. UNION STREET) PLASTIC WATER LIQUID LIMIT % CONTENT % LIMIT % DESCRIPTION OF MATERIAL ENGLISH UNITS Ê E ROCK QUALITY DESIGNATION & RECOVERY E RQD%--- REC.X-2 DIST. ELEVATION BOTTOM OF CASING LOSS OF CIRCULATION 100% 20%-40%-60%-80%-STANDARD PENETRATION BLOWS/FT. SURFACE ELEVATION 9.20 30-Silty SAND, With Gravel, Brown, Moist to Wet, Medium Dense, (SM) Marine CLAY, Trace Sand, Reddish Brown and Gray, Moist, 9 22 9 18 9 Very Stiff to Hard, (CH) 35 22 18 18 ⊗:18 10 SS 18 18 **⋈**16 12 22 18 18 **⊗24** 50 13 22 18 18 **⊗**29 55 22 18 13 14 60 CONTINUED ON NEXT PAGE. THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES IN-SITU THE TRANSITION MAY BE GRADUAL **Ջ**₩⊾8.5' WS OR (D) BORING STARTED /27/2007 **Ψwl(bcr)** N ¥wl(acr) N / A BORING COMPLETED CAVE IN DEPTH . N/A '2007

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CLIENT JOB # BORING # SHEET GRAHAM COMPANIES, LTD 13983 3 OF 3 B-4ARCHITECT-ENGINEER ROBINSON TERMINAL AT ALEXANDRIA WATERFRONT CALIBRATED PENETROMETER TONS/FT. 2 SITE LOCATION ALEXANDRIA, VIRGINIA (500 N. UNION STREET) PLASTIC WATER LIQUID LIMIT X CONTENT % LIMIT % X. DESCRIPTION OF MATERIAL ENGLISH UNITS Ē E LEVELS E ROCK QUALITY DESIGNATION & RECOVERY E H. RQD%— — REC.%-Š **ELEVATION** DEPTH BOTTOM OF CASING LOSS OF CIRCULATION 100% 20%----40%----60%----80%---100%-WATER STANDARD PENETRATION BLOWS/FT. SURFACE ELEVATION 9.20 50+ 30 60 Marine CLAY, Trace Sand, Reddish Brown and Gray, Moist, Very Stiff to Hard, (CH) SS | 18 16 15 **(X)** 28 65 SS 18 17 16 \otimes 32 70-17 81 | 22 16 **⋈3**7 18 SS 18 18 ⊗42 80-END OF BORING @ 80.00' 90 THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES IN-SITU THE TRANSITION MAY BE GRADUAL ұж. 8.5' WS OR (17) BORING STARTED 12/27/2007 ŢWL(ACR) N / A CAVE IN DEPTH . N/A ¥wl(bcr) N / A BORING COMPLETED 2007 ¥w. 3.5°

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CLIENT BORING # JOB # SHEET GRAHAM COMPANIES, LTD 13983 2 B-5OF ARCHITECT-ENGINEER ROBINSON TERMINAL AT ALEXANDRIA WATERFRONT CALIBRATED PENETROMETER TONS/FT. 2 SITE LOCATION 0 ALEXANDRIA, VIRGINIA (500 N. UNION STREET) PLASTIC LIQUID WATER LIMIT % CONTENT % LIMIT % х-DESCRIPTION OF MATERIAL ENGLISH UNITS LEVELS E E Ê ROCK QUALITY DESIGNATION & RECOVERY 3 DIST. 8 ELEVATION RQD%— — REC.%-DEPTH BOTTOM OF CASING LOSS OF CIRCULATION 100% 20%-40%-60%-80%-SAMPLE SURFACE ELEVATION STANDARD PENETRATION BLOWS/FT. 9.20 10 50+ 30 30 Silty SAND, Trace Gravel, Dark Brown to Purplish Brown, Moist to Wet, Very Loose to Loose, (SM) 25 22 | 18 | 16 9 & 9 35 GRAVEL, With Silty Sand, Dark Brown, Wet, Very Dense, (GP) 22 15 10 1 Sandy CLAY, Brown and Gray, Moist to Wet, Stiff, (CL) 11 | 55 | 18 | 16 **⊗**13 45 12 22 18 16 50-13 22 | 18 | 16 55 Marine CLAY, Trace Rock Fragment, Reddish Brown and Gray, Moist, Very Stiff, (CH) 22 | 18 | 18 14 (>) 17 60 END OF BORING @ 60.00' THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES IN-SITU THE TRANSITION MAY BE GRADUAL ¥w⊾8.5' WS OR 🔞 BORING STARTED /2008 Ψ wl(BCR) N / A Ψ wl(ACR) N / ABORING COMPLETED CAVE IN DEPTH . N/A /2008

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CLIENT JOB # BORING # SHEET GRAHAM COMPANIES, LTD 13983 B-62 OF 3 PROJECT NAME ARCHITECT-ENGINEER ROBINSON TERMINAL AT ALEXANDRIA WATERFRONT SITE LOCATION CALIBRATED PENETROMETER TONS/FT. 2 ALEXANDRIA, VIRGINIA (500 N. UNION STREET) PLASTIC WATER LIQUID LIMIT % CONTENT % LIMIT % X DESCRIPTION OF MATERIAL **ENGLISH UNITS** E LEVELS E ROCK QUALITY DESIGNATION & RECOVERY 3 Š DIST RQD%--- -- REC.%-DEPTH ELEVATION BOTTOM OF CASING LOSS OF CIRCULATION 100% 20%-40%-60%-80%-100% SAMPLE WATER SURFACE ELEVATION STANDARD PENETRATION BLOWS/FT. 9.20 50 +30 Silty SAND, With Gravel, Dark Brown, Moist, Medium Dense to Very Dense, (SM) SS | 18 9 14 **⊗**81 35 22 18 10 16 **⊗**37 22 11 18 | 16 Ø19 Marine CLAY, Trace Sand, Reddish Brown and Gray, Moist, Very Stiff, (CH) 22 12 18 16 (∑)18 50° 22 13 18 18 ₿18 14 22 18 18 60 CONTINUED ON NEXT PAGE. THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES IN-SITU THE TRANSITION MAY BE GRADUAL ¥w 5.0' WS OR 1 BORING STARTED 12/28/2007 ¥wl(bcr) N / A ▼wl(acr) N / A BORING COMPLETED 12/28/2007 CAVE IN DEPTH • 14.0'

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DRILLING METHOD HSA

RIG T - 1

AM, ECS Mid-Atlantic, LLC. Chantilly, VA

CLIENT JOB # BORING # SHEET GRAHAM COMPANIES, LTD 13983 B-63 OF 3 PROJECT NAME ARCHITECT-ENGINEER ROBINSON TERMINAL AT ALEXANDRIA WATERFRONT CALIBRATED PENETROMETER TONS/FT. 2 SITE LOCATION ALEXANDRIA, VIRGINIA (500 N. UNION STREET) PLASTIC WATER LIQUID LIMIT % CONTENT % LIMIT % DESCRIPTION OF MATERIAL **ENGLISH UNITS** E LEVELS E ROCK QUALITY DESIGNATION & RECOVERY Ξ DIST. RQDX- - REC.X Š ELEVATION DEPTH BOTTOM OF CASING LOSS OF CIRCULATION 100% 20%-40%-60%-80%-SAMPLE STANDARD PENETRATION BLOWS/FT. SURFACE ELEVATION 9.20 60 Marine CLAY, Trace Sand, Reddish Brown and Gray, Moist, Very Stiff, (CH) 22 15 18 16 \otimes 23 65 22 18 16 16 \otimes 23 17 22 18 | 16 **⊗**24 75 22 18 16 18 ⊗56 80 END OF BORING @ 80.00' 90 THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES IN-SITU THE TRANSITION MAY BE GRADUAL ¥wr 5.0' WS OR (11) BORING STARTED 12/28/2007 ¥wl(bcr) N / A ¥wl(acr) N / A BORING COMPLETED CAVE IN DEPTH • 14.0' 28/ 2007

FOREMAN CONNELLY

RIG T -- 1

ects}\13900-13999\01-13983\b-Drafting\13983BL.dwg,1/29/2008 10:33:34 AM, ECS Mid-Atlantic, LLC. Chantilly, VA,

DRILLING METHOD HSA

CLIENT						JOB#	B# BORING#			SHEE	Т					
Alexa	ndria	a No	rth '	Tern	ninal, LLC		13	983-B		B-7		1 OF	2	F	Co	
	ison		mina	al No	orth - Final Ge	otechnical		CT-ENGINEER	3							
SITE LOC	CATION						Enler	<u>t-Bryan</u>				-O- CALIBE	PATED PE	NETROME	TER TONS/FT ²	
500 N	1. Un	ion	Stre	et, A	<u> Alexandria, Ci</u>	ty of Alexand	ria									
SOO N. Union Street, Alexandria, City of Alexa								TION						ROCK QUALITY DESIGNATION & RECOVERY RQD% REC%		
			<u> </u>	Î Î	DESCRIPTION OF M	ATERIAL		ENGLISH		S. E		PLASTIC LIMIT%		ATER	LIQUID LIMIT%	
(FT)	Ö	E TYPE	E DIST	ERY (II	BOTTOM OF CASING	a —	LOSS OF CIRCULATION ()			LEVEI	9/	× • Δ				
ОЕРТН (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	SURFACE ELEVATION	N	WATER LEVELS BLOWS/6"				STANDARD PENETRATION BLOWS/FT					
0_					Concrete Dept	h [7"] DY LEAN CLAY	/ WITH	GRAVEI	////							
-	S-1	SS	18	12		alt, Grayish Bro					9 11 11		⊗ 22			
-	S-2	SS	18	16	(SC FILL) CLA	YEY SAND WIT Dense [Sample					8 19 18			37		
5—					_Gasoline]	SAND WITH SII						15				
	S-3	SS	18	12		: [Sample Smell					6 7 8	15				
_	-					YEY SAND, Co										
	S-4	SS	18	10	Fragments , Bi	own, Moist, Me	alum De	ense		_	4 6	13-⊗				
10 —	3-4		10	10						<u></u>	7	13 🛇				
-	-															
_					(SC) CLAYEY Loose	SAND, Brown a	nd Gra	y, Wet,								
-	S-5	SS	18	8							4 4	7-⊗				
15 —											3					
						_										
_	1				CL) LEAN CL Soft	AY WITH SAND	, Gray,	Wet, Very								
_	S-6	SS	18	16							WOH WOH	X −1 17→	← -△:	25	50.8-●	
20 —											, i					
_	1				(SC) CLAYEY	SAND, Contain	s Mica	Gravish								
_	_				Brown, Moist,		, mou,	Gray ion			4					
25 —	S-7	SS	18	12							8	14-&				
-																
-						GRAVEL WITH	SAND	, Gray,								
				<u> </u>	Moist, Very De	nse					5			Ì		
30 —	S-8	SS	18	6							31 33				64	
									Z¥ 249		CC	ONTINUE	D ON	NEX	T PAGE.	
	TH	E STR	ATIFIC	CATION	I LINES REPRESENT	THE APPROXIMATE	BOUND	ARY LINES BE	TWEEN S	OIL TYPI	ES. IN-	SITU THE TRAN	SITION MA	Y BE GRAD	DUAL	
≟ WL	9.50			ws□	WD□	BORING STARTE)	10/07/14								
₩ WL(E	BCR)		<u>*</u>	WL(AC	CR)	BORING COMPLE	TED	10/07/14			CAVE IN DEPTH					
₩ RIG 55 LC AT								FOREMAN N	ladal	\Box	DRILLING METHOD 3.25 HSA/MUD ROTARY					

CLIENT							JOB#	BORIN	NG #		SHEET		
Alexa	ndria	a No	rth	Term	ninal, LLC		13983-B		B-7		2 OF 2	-0	
PROJECT	NAME				orth - Final Ge	otechnical	ARCHITECT-ENGINE	ER			•	LU	5
Study SITE LOC	ΑΤΙΟΝ						Ehlert-Bryan				Γ		
			.		da a disa O'		D.				-O- CALIBRATED P	ENETROMETER TO	NS/FT ²
NORTHIN	<u>l. Un</u> ^{IG}	ion (Stre 	<u>eet, <i>P</i></u> Eastin	<u>Alexandria, Ci</u> ^{IG}	<u>ty of Alexanc</u> Station	dria				ROCK QUALITY DE		VERY
											RQD%	REC% ——	
			<u>Z</u>	9	DESCRIPTION OF M	ATERIAL	ENGLIS	H UNITS	S. F				LIQUID LIMIT%
Ê	Š.	TYPE	DIST. (IN)	BY (II	BOTTOM OF CASING	g 👅	LOSS OF CIRCULAT	ION 200%	LEVEL ION (F		×	•	Δ
ОЕРТН (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE	RECOVERY (IN)	SURFACE ELEVATION	ON			WATER LEVELS ELEVATION (FT)	BLOWS/6"	⊗ STANDAF	RD PENETRATION	
<u> </u>	S. S.	SA	-SA	H	(GC) CLAYEY	GRAVEL WITH	I SAND, Grav.	22//2	<u></u>	BL	BL	.OWS/FT	:
					Moist, Very De	nse	ownish Gray, Wet,						
_					Stiff	EAN CLAY, BIC	ownish Gray, wet,				/		
	S-9	ss	18	12						10 6	15		
35 —										9			
_											\		
					(CH) FAT CLA Very Stiff	Y, Gray to Brow	vn, Moist, Stiff to				\		
_	S-10	SS	18	14	vory cum					4 7	23-⊗		
40 —	3-10	33	10	14						16	23 %		
_													
_										3			
45	S-11	SS	18	16						5 9	14-⊗		
45 													
_													
_													
	S-12	SS	18	14						4 6	17-🛇		
50 —										11			
_													
_	S-13	SS	18	10						4 10	10.00		
55 	3-13	33	10	10						9	19-⊗		
_											\		
_													
_										8			
60 —	S-14	SS	18	16						13 12	25-⊗		
					END OF BORI	NG @ 60.00'							
, '	. '	ļ		, ,	,			. '		, '			
	TUI	STD	ATIF!	CATION	I INES REPRESENT	THE APPROVIMATI	E BOLINDARV LINES D	ETWEEN.	SOII TVP	S INI	SITU THE TRANSITION N	MAY RE GRADUAL	
₩L !		_ 0111/	X11F1	ws	WD	BORING STARTE		LIVVEEIN	JOILTIPE	.J. IIN-	ON THE THANGITION IV	IAT DE GHADUAL.	
₩L(B			•	WL(AC		BORING COMPLE				CAV	E IN DEPTH		
	Ο Ι 1 <i>)</i>		Ŧ	VVL(AU				NI = -! - !					
≟ Mr						RIG 55 LC AT\	V FOREMAN	Nadal		DRIL	LING METHOD 3.25 HS	SA/MUD ROTAR	1

CLIENT							JOB#		BORIN	IG#		SHE	ET		
Alexa	ndria	a No	rth [·]	Tern	ninal, LLC		1	3983-B		B-8		10	F 2		Ca
	ison	Terr	nina	al No	orth - Final Ge	otechnical		TECT-ENGINE	ER						
Study SITE LOC	CATION						Enle	<u>rt-Bryan</u>				-O- CALIE	RATED P	ENETROME	TER TONS/FT ²
500 N	I. Un	ion :	Stre	et, A	Alexandria, Ci	ty of Alexand	ria					0			& RECOVERY
NORTHIN	NG			=ASTIN	lG	STATION							,	REC%	
			(N)	9	DESCRIPTION OF M	ATERIAL		ENGLIS	H UNITS	S. É		PLASTIC LIMIT%		ATER	LIQUID LIMIT%
(FT)	Š.	E TYPE	E DIST.	ERY (II	BOTTOM OF CASING	g T	LOSS	OF CIRCULAT	ION MOZ	LEVEI ION (F	.9,	\times		•	\triangle
ОЕРТН (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	SURFACE ELEVATION	N				WATER LEVELS ELEVATION (FT)	BLOWS/6"	\otimes		D PENETR OWS/FT	ATION
0_	- 0,	0)	- 0)		Concrete Dept	h [7"] DY LEAN CLAY	/ Con	toina Priok	////	<u> </u>					
_	S-1	SS	18	10	Brown, Moist,		, Con	iailis blick,			16 14 10		⊗ 24		
_	S-2	SS	18	10	(CL FILL) GRA Moist, Medium	VELLY LEAN C	LAY,	Brown,			2 2 3	5	24		
5—					(CL) LEAN CL	AY WITH SAND	, Tan,	Moist.							
	S-3	SS	18	12	Medium Stiff			ŕ			2 3 4	7-🚫			
_						Y, Gray, Moist to	o Wet,	Very Soft							
_					to Soft					<u></u>	2				
10 —	S-4	SS	18	8						-	3 1	⊗ −4			
-															
_	S-5	SS	18	12							1	⊗-2	27.7⊣		
15 —											1				
_															
_					(SC) CLAYEY Wet, Medium [SAND, Contains Dense	s Mica	, Brown,							
	S-6	SS	18	16							2 5 12	17-	\otimes		
20 —													\		
-					(SC) CLAYEY	SAND, Brown, I	Moist.	Medium							
_					Dense	, , ,	,				13				
25 —	S-7	SS	18	18							13 12		25-🛇		
_															
-															
=	S-8	SS	18	16							14 9	11	9-⊗		
30 —	3-0		10	16							10	1			
	-										CC	UNITNO	ED OI	NEX	T PAGE.
	TH	≣ STR.	ATIFIC	OITA	I LINES REPRESENT	THE APPROXIMATE	BOUN	DARY LINES B	ETWEEN S	SOIL TYPE	ES. IN-	SITU THE TRA	NSITION M	AY BE GRAI	DUAL.
≟ WL	9.00			ws□	WD□	BORING STARTED)	10/06/14							
₩ WL(B	SCR)		<u>*</u>	WL(AC	R)	BORING COMPLE	TED	10/06/14			CAVE	E IN DEPTH			
₩ wL						RIG 55 LC ATV	,	FOREMAN	Nadal		DRIL	LING METHOD	3.25 HS	A/MUD F	OTARY

CLIENT							JOB#	BORING	G#		SHEET	
Alexa	ndria	a No	rth	Term	ninal, LLC		13983-B		B-8		2 OF 2	-00
PROJECT	NAME				orth - Final Geo	technical	ARCHITECT-ENGINEER	₹				LUC
Study							Ehlert-Bryan					
SITE LOC											-O- CALIBRATED F	PENETROMETER TONS/FT ²
500 N	<u>. Un</u> ^G	ion (Stre T	et, <i>P</i>	Alexandria, City	<u>r of Alexand</u>	<u>Iria</u>				ROCK QUALITY DE	SIGNATION & RECOVERY
											RQD%	REC% ——
			<u></u> <u>2</u>		DESCRIPTION OF MA	TERIAL	ENGLISH					WATER LIQUID
_	<u>.</u>	YPE	DIST. (IN)	RECOVERY (IN)	BOTTOM OF CASING	-	LOSS OF CIRCULATION	N ∑100%	WATER LEVELS ELEVATION (FT)		LIMIT% CC	DINTENT% LIMIT%
ОЕРТН (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE D	OVER					ER LE	BLOWS/6"	⊗ STANDAL	RD PENETRATION
DEP.	SAM	SAM	SAM	REC	SURFACE ELEVATION				WAT ELE\	BLO		OWS/FT
_					(SC) CLAYEY S Dense	AND, Brown, I	Moist, Medium					
_					(SC) CLAYEY S	AND WITH G	RAVEL, Brown to				\	
					Gray, Moist, Der	ise to very De	ense			11	·	
35 —	S-9	SS	18	8						13 15	28-	- ×
_												
_												
_	S-10	ss	18	10						13 12	24-&	
40 —										12		
_												
_												
										11		
45 	S-11	SS	18	16						32 18		50-⊗
_												
_												
_	S-12	SS	18	14						13 16		36-⊗
50 —										20		
_												
					(CH) FAT CLAY	WITH SAND,	Gray to Brown,				/	
					Moist, Very Stiff	to Hard				10		
	S-13	SS	18	18						13 8	21-⊗ ●	⊢ 24.9
_												
_												
_												
_	S-14	SS	18	16						9 17		34-
60 —					END OF BORIN	G @ 60.00'				17		
_												
	THE	E STR	ATIFI	CATION	I LINES REPRESENT TI	HE APPROXIMATE	E BOUNDARY LINES BE	TWEEN S	OIL TYPE	S. IN-	SITU THE TRANSITION N	MAY BE GRADUAL.
Ţ WL	9.00			ws□	WD□	BORING STARTE	10/06/14					
₩ WL(B	CR)		<u>=</u>	WL(AC	R)	BORING COMPLE	TED 10/06/14			CAVE	E IN DEPTH	
₩L						RIG 55 LC AT\	V FOREMAN N	adal		DRIL	LING METHOD 3.25 H	SA/MUD ROTARY

CLIENT							JOB#		BORII	NG #			SHEET				4
Alexa	ndria	ι No	rth	Tern	ninal, LLC		1:	3983-B		В	3-9		1 OF 2	2	5	n.	
PROJECT	NAME				orth - Final Ge	otechnical	ARCHIT	ECT-ENGINE	ER				•		<u></u>	U\	
SITE LOC	ATION						Ehle	<u>rt-Bryan</u>									ii.
500 N	Un	ion S	Stre	eet A	Mexandria Cit	ty of Alexand	dria						-O- CALIBRA	TED PE	NETROME	ETER TON	IS/FT ²
NORTHIN	G	1011		EASTIN	Alexandria, Cit	STATION	arra_						ROCK QUALIT	TY DESI	GNATION REC%	& RECOV	/ERY
			<u> </u>	2	DESCRIPTION OF M	ATERIAL		ENGLIS	SH UNITS	တ	F.		PLASTIC LIMIT%		ATER TENT%		QUID MIT%
(FT)	S	Ξ TΥPΕ	E DIST	ERY (II	BOTTOM OF CASING	a —	LOSS	OF CIRCULAT	ION 2002	LEVEI	JON (F	9/	×		•		-∆
О DEРТН (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	SURFACE ELEVATION				ESPANY TAY	WATER LEVELS	ELEVATION (FT)	BLOWS/6"	⊗ st/		PENETR WS/FT	ATION	
						N CLAY WITH	SAND,	Light				4					
_	S-1	SS	18	16	Brown, Moist, S	Stiff						5 8 5	13-⊗				
	S-2	SS	18	18								6 7	13-🛇				
5 —					(CH) FAT CLA	Y, Orangish Bro	own, M	oist, Stiff				4					
_	S-3	SS	18	18								7 8	15-⊗				
_					(SP-SM) SAND Medium Dense	O WITH SILT, G	iray, M	oist,									
-	S-4	ss	18	12						∇		5 6	16−⊗				
10 —										=		10					
_																	
_					(CH) FAT CLA	Y, Gray, Moist,	Stiff										
_	S-5	SS	18	18								5 5	9-⊗				
15 —												4					
					(00) OLAVEY	CAND Contain	- NA:	Duranish									
_					Gray, Moist, Ve	SAND, Contain ery Loose	is iviica	, Brownish									
	S-6	ss	18	18								2 1 2	⊗-3				
20 —																	
-					(NO RECOVEI	RY)											
_	S-7	SS	5	5	(1.01.20012	, ,						50/5				50	/5 ò
25—	,																ĺ
_					(SC) CLAYEY	SAND WITH G	RAVEL	., Gray,									
_					Moist to Wet, N	/ledium Dense t	to Very	Dense				24					
30 —	S-8	SS	18	16								34 28				62-0	Ì
_	i İ	ļ		1	I				[XXXX]	l	ı	ر در	NTINUE	\		:	
	TLII	CTD.	\TIE!	CATION	I LINES REPRESENT	THE APPROVIMAT	E BOLINI	JARV I INIES F	ETWEEN	SOI! .							JL.
¥ WL		_ O I K/		ws 🗌	WD	BORING STARTE		10/02/14	LIVVEEN	JUIL	TIPE	o. IIN-	OTTO THE THAINST	I ION IVIA	I DE GRAI	JUAL.	
Ψ WL(B				WL(AC		BORING COMPLE		10/02/14			+	CAVE	IN DEPTH				
₩L						RIG 55 LC AT	V	FOREMAN	Nadal		\dagger	DRILI	ING METHOD 3.:	25 HS	VMUD F	OTARY	

CLIENT						JOB#	BORI	NG #		SHEET		
Alexa	ndria	a No	rth	Tern	ninal, LLC	13983-B		B-9		2 OF 2	-6	
Study	son	Terr	nin	al No	orth - Final Geotechnical	Ehlert-Bryan	ĒR					
SITE LOC										-O- CALIBRATED F	PENETROMETER	TONS/FT ²
500 N NORTHIN	I. Un ig	ion (Stre	eet, <i>F</i> Eastin	Alexandria, City of Alexan	ndria				ROCK QUALITY DE RQD%		COVERY
		PE	N). TS	<u> </u>	DESCRIPTION OF MATERIAL		H UNITS				WATER ONTENT%	LIQUID LIMIT%
ОЕРТН (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	BOTTOM OF CASING SURFACE ELEVATION	LOSS OF CIRCULAT	ION <u>>100%</u> >	WATER LEVELS ELEVATION (FT)	BLOWS/6"		RD PENETRATIC	_
DEF	SAN	SAN	SAN	REC	(SC) CLAYEY SAND WITH	CDAVEL Gray	<i>17.77.77</i>	WA:	BLC	В	LOWS/FT	:
_					Moist to Wet, Medium Dens	e to Very Dense						
_												
_	S-9	ss	18	8					9 13 11	24-🛇		
35 —									''			
_					(CD CC) CDAVEL MITH C	IAV Cray and Light						
_					(GP-GC) GRAVEL WITH CL Brown, Moist to Wet, Mediu	m Dense						
	S-10	ss	18	8					3 4 15	19-⊗		
40 —									,,,			
_												
_												
	S-11	ss	18	12					2 4 8	12-⊗		
45 —												
_					(CH) FAT CLAY, Grayish Br	vous Maiat Ctiff to						
					Hard	rown, Moist, Still to						
	S-12	ss	18	14					4 5 10	15-\times \times	- - - - - - 34.1	− <u></u> 78
50 —									10	\ 22	34.1	
_								1				
_								1				
_	S-13	ss	18	6				1	4 10 11	21-		
55 —								1	''			
_								1		\	\	
_								1				
_	S-14	ss	18	8				1	8 13		32-&	
60 —					END OF BORING @ 60.00'				19			
	1 1	I			l		ı	l	!	<u>i i</u>		<u> </u>
<u> </u>		E STRA	ATIFIC	CATION WS 🗆	N LINES REPRESENT THE APPROXIM. WD □ BORING STAR		ETWEEN	SOIL TYPI	ES. IN-	SITU THE TRANSITION I	MAY BE GRADUAL	
₩ WL/B				WL(AC					CAV	IN DERTU		
₩ WL(B	OH)		ŧ	vvL(AC	+		No de l			E IN DEPTH		NDV
∰ Mr					RIG 55 LC A	ATV FOREMAN	Nadal		DRIL	LING METHOD 3.25 H	SA/MUD ROTA	4HY

CLIENT							JOB#		BORING	i #		SHEET			
Alexa	ndria	<u>a No</u>	rth [·]	Tern	ninal, LLC		1398	3-B		B-10		1 OF	2	7	20
	ison	Teri	mina	al No	orth - Final Ge	otechnical	ARCHITECT-I								
Study SITE LOC	CATION	l					Ehlert-B	<u>ryan</u>				-O- CALIBR/	ATED PENE	ETROMET	ER TONS/FT ²
500 N	<u>I. Un</u>	ion	Stre	et, A	Alexandria, Cit	y of Alexand	ria					ROCK QUAL			
NORTHIN	NG			EASTII	NG	STATION								REC%	
			<u> </u>	<u> </u>	DESCRIPTION OF M	ATERIAL		ENGLISH	I .	v E		PLASTIC LIMIT%	WAT		LIQUID LIMIT%
(FT)	Š.	TYPE	: DIST.	ERY (II	BOTTOM OF CASING	.	LOSS OF CI	RCULATIO	N >100%	LEVEL ION (F	.9.	×	•)	
ОЕРТН (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	SURFACE ELEVATION	N			N \(\) 100%	WATER LEVELS ELEVATION (FT)	BLOWS/6"	⊗ st	ANDARD F		TION
0 _	.,,	0,	0,		Concrete Dept	h [7"] YEY SAND WIT			<i>27//</i>						
_	S-1	SS	18	10		ist, Medium Der		L ,			6 8 9	17-⊗	'		
_	S-2	SS	18	12	(SC) CLAYEY Moist, Medium	SAND, Light Bro Dense	own to Red	,			8 8 9	17			
5—															
	S-3	SS	18	14							9 9 2	11−⊗			
_	-					GRAVEL, Dark	Gray, Wet,		=	7					
	S-4	ss	18	10	Loose						5 5				
10 —	3-4	55	18	10							4	9			
_	-											\setminus			
_					(CL) LEAN CL	AY, Pinkish Gra	y, Moist, St	iff							
_	S-5	SS	18	12							4 6	1.4-⊗			
15 —	<u> </u>										8				
					(01) 5401 01	A)/ D)A/ /	· · · · · · · ·								
-					(CL) LEAN CL	AY, Brown, Wet,	, Very Soft								
	S-6	ss	18	16							WOH 1 1	⊗ -2 2	25.1−●		
20 —															
						SAND WITH GF		own,							
					Moist to Wet, N	Medium Dense to	o Dense				10				
25 —	S-7	SS	18	12							16 13		29-⊠		
_															
-	S-8	SS	18	14							19 23				49-⊗
30 —											26				
											CC	NTINUE	D ON	NEXT	PAGE.
		E STR	ATIFIC	CATION	I LINES REPRESENT	THE APPROXIMATE	BOUNDARY	LINES BET	WEEN SC	DIL TYPE	S. IN-	SITU THE TRANS	ITION MAY	BE GRADL	JAL.
₩L				ws□	WD 🗌	BORING STARTED	10/0	7/14		_					
₩ WL(B	BCR)		<u>=</u>	WL(AC	R)	BORING COMPLE	TED 10/0	7/14		_	CAVE	IN DEPTH			
₩ wL						RIG 55 LC ATV	/ FOF	REMAN Na	adal		DRIL	LING METHOD 3	.25 HSA/	MUD RC	TARY

Alexandria North Terminal, LLC 13983-B B-10 PROJECT NAME ARCHITECT-ENGINEER	2 OF 2
PROJECT NAMEARCHITECT-ENGINEER	
Robinson Terminal North - Final Geotechnical Study Ehlert-Bryan	
	-O- CALIBRATED PENETROMETER TONS/FT ²
500 N. Union Street, Alexandria, City of Alexandria NORTHING EASTING STATION	ROCK QUALITY DESIGNATION & RECOVERY RQD% - — - REC% ——
SAMPLE NO. SAMPLE NO. SAMPLE TYPE SAMPLE	PLASTIC WATER LIQUID LIMIT%
SAMPLE NO. SAMPLE NO. SAMPLE TYPE SAMPLE DIST. (II) RECOVERY (IN) RECOVE	⊗ STANDARD PENETRATION
	BLOWS/FT
(SC) CLAYEY SAND WITH GRAVEL, Brown, Moist to Wet, Medium Dense to Dense	
S-9 SS 18 16 20 14 20 14	34-🛇
(CL) LEAN CLAY, Gray, Moist, Very Stiff to	
Hard Hard	
S-10 SS 18 14 16 16 11	27-🛇
S-11 SS 18 16 15 17	32÷⊗
(SC) CLAYEY SAND, Brown, Moist, Medium	
Dense to Dense S-12 SS 18 18 18	41-⊗
50 - 33 10 10 23	41,8
	23-⊗
55 —	
— (CL) SANDY LEAN CLAY, Brownish Gray, Moist, Very Stiff	
S-14 SS 18 16 7 12 8	20-⊗
60 END OF BORING @ 60.00'	
]	<u> </u>
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-S	ITLL THE TRANSITION MAY BE GRADUAL
₩ 7.50 WS WD BORING STARTED 10/07/14	
	IN DEPTH
	NG METHOD 3.25 HSA/MUD ROTARY

CLIENT						J	OB#		BORIN	NG#		SHEET			
Alexa	andria	a No	rth	Tern	ninal, LLC		1;	3983-B		B-1	1	1 OF	2		Co
	nson		mina	al No	orth - Final Ge	otechnical		ECT-ENGIN							
Study SITE LO	/ CATION	1					<u>Ehle</u>	<u>rt-Bryan</u>	1			0 044400	TEO 0	-	
500 N	N. Ur	nion	Stre	et. A	Alexandria, Cit	v of Alexandr	ia					-O- CALIBRA	ATED P	ENETROME	TER TONS/FT ²
NORTHII	NG			EASTIN	lG .	STATION						ROCK QUALI RQD% -	TY DES	SIGNATION REC%	& RECOVERY
			<u> </u>	<u> </u>	DESCRIPTION OF M	ATERIAL		ENGL	ISH UNITS	ν, i	<u>-</u>	PLASTIC LIMIT%		VATER NTENT%	LIQUID LIMIT%
É.	Ö.	TYPE	DIST.	ERY (II	BOTTOM OF CASING	G —	LOSS	OF CIRCULA	ATION 200%	LEVEL	<u>+</u> 20 5	×		•	\triangle
ОЕРТН (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	SURFACE ELEVATION	N				WATER LEVELS	ELEVATION (F1)	⊗ st		RD PENETR OWS/FT	ATION
0 _))	\ <u>\</u>	Ŝ	<u> </u>	Concrete Dept	h [7"]				≯ i			-		
_	S-1	ss	18	3		WELL-GRADED ay, Moist, Loose					4	∅			
-	S-2	SS	6	2	Dense	•		•			50	10			×
_															50/0
5 —					(CL) SANDY L	EAN CLAY, Brov Soft to Medium S	vnish tiff	Red to			3				
_	S-3	SS	18	12	Brown, Woldt,	Solt to Wicdiam C					2	6-8			
_															
_	S-4	SS	18	16						\Box	2 2 2				
10	10-7		10	10						¥					
_															
_					(SP-SC) SAND Moist, Medium	WITH CLAY, G	ayish	Brown,							
_	S-5	SS	18	10	Worst, Wedium	Delise					11				
15—	3-3	33	10	18							É				
_															
_					(NO RECOVE	RY)									
		00	40								3				
20 —	S-6	SS	18	0							3				
_															
_						SAND, Gray, Mo	ist, Lo	ose to							
_]		40	1.0	Medium Dense)					1				
25 	S-7	SS	18	16							7	1.4-🛇			
_															
_															
_											7				
30 —	S-8	SS	18	14							4				
-	⊣	I	I	I	I						C	ONTINUE	D OI	N NEX	T PAGE.
	TH	E STR	ATIFIC	CATION	I LINES REPRESENT	THE APPROXIMATE	BOUNE	DARY LINES	BETWEEN	SOIL T	YPES.	N-SITU THE TRANS	ITION M	IAY BE GRAD	DUAL.
₩L	9.50			ws□	WD 🗌	BORING STARTED		10/09/14							
₩ WL(E	BCR)		<u></u>	WL(AC	R)	BORING COMPLET	ED	10/09/14			CA	VE IN DEPTH			
₩L						RIG 55 LC ATV		FOREMAN	Nadal		DF	ILLING METHOD 3	.25 HS	SA/MUD R	OTARY

CLIENT							JOB#	BORI	NG #			SHEET		
Alexar PROJECT	ndria	No	rth	Term	ninal, LLC		13983-B	NEED .	B-	11		2 OF 2		Ca
Robin: Study	son	Terr	nina	al No	orth - Final Geote	chnical	Ehlert-Brya							
		: C	~ 1		Navanalsia City	f Alexana	dui a					-O- CALIBRATED F	ENETROME	TER TONS/FT ²
NORTHIN	<u>. Un</u> G	ion s	<u>stre</u>	EASTIN	Alexandria, City o	TION	oria					ROCK QUALITY DE RQD%		RECOVERY
		PE	SAMPLE DIST. (IN)	(N)	DESCRIPTION OF MATE			GLISH UNITS	ELS	(E)			WATER INTENT%	LIQUID LIMIT%
ОЕРТН (FT)	SAMPLE NO.	SAMPLE TYPE	LE DIS	VEF	BOTTOM OF CASING	<u> </u>	LOSS OF CIRCUL	_ATION <u>>100%</u> >	WATER LEVELS	ELEVATION (FT)	BLOWS/6"		DD DENETDA	TION
DEP1	SAME	SAME	SAM	RECC	SURFACE ELEVATION			V16 V V17	WATI	ELEV	BLOV		OWS/FT	TION
35 —	S-9	SS	18	18	(SC) CLAYEY SAI Medium Dense (CL) GRAVELLY L Gray, Moist, Very	EAN CLAY				-	8 10 13	23-		
					(CL) LEAN CLAY,	Dark Gray,	Wet, Stiff							
	S-10	SS	18	8							7 5	11-⊗		
40											6			
					(CL) SANDY LEAN Brown to Gray, Mo						4			
45 —	S-11	SS	18	16							1	⊗ −3 ● −12.6		
50 —	S-12	SS	18	14							4 6 9	15-⊗		
					(CL) LEAN CLAY Very Stiff	WITH SAND	D, Brown, Wet,				_			
55 —	S-13	SS	18	14							5 8 8	16-&		
					(WOOD Fragment	s) [No Soil f	Recovered]							
I ⊢	S-14	SS	8	1							10 0/2			⊗ 50/2
60 —					END OF BORING	@ 60.00'		3			ı			
	'			. '				,	-	•	•			
	THE	STRA	ATIFIC	CATION	I LINES REPRESENT THE	APPROXIMAT	E BOUNDARY LINE	S BETWEEN	SOIL T	YPES.	. IN-9	SITU THE TRANSITION N	MAY BE GRAD	JAL.
¥ WL €				ws□		RING STARTE								
₩ WL(BC			<u></u>	WL(AC	R) BO	RING COMPLE	ETED 10/09/14	4		С	AVE	IN DEPTH		
₩L					RIC	55 LC AT	V FOREMA	N Nadal		D	RILL	LING METHOD 3.25 H	SA/MUD RO	DTARY

CLIENT							JOB#		BORIN	NG#		SHEE	ĒΤ		
Alexa	andri	a No	rth	Tern	ninal, LLC		1	3983-B		B-1	2	1 OF	- 2	F	Co
	nson		mina	al No	orth - Final Ge	otechnical		TECT-ENGINE	ER						
Study SITE LO	V CATION	I					<u>Enle</u>	ert-Bryan				-O- CALIB	RATED P	ENETROME	TER TONS/FT ²
500 1	N. Ur	iion	Stre	et, A	Alexandria, Cit	y of Alexand	ria								
NORTHI	NG			EASTIN	NG S	ŠTATION						ROCK QUA			& RECOVERY
			(N)	2	DESCRIPTION OF M.	ATERIAL		ENGLIS	SH UNITS	S i	-	PLASTIC LIMIT%		VATER NTENT%	LIQUID LIMIT%
(FT)	Ö	TYPE	E DIST	ERY (I	BOTTOM OF CASING	a —	LOSS	OF CIRCULAT	10N \(\sqrt{100%} \)	LEVE	- 0 0 - -	×		•	
DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	SURFACE ELEVATIO	DN				WATER LEVELS	ELEVATION (F1) BLOWS/6"	⊗ :		RD PENETR .OWS/FT	ATION
0_	<u> </u>	S	S	<u> </u>	Concrete Dept	h [14"]			8,74	> 1	<u>п</u> —				
_						DY LEAN CLAY	WITH	H GRAVEL,							
_	S-1	SS	18	10	Brownish Gray	, Moist, Stiff					6	13 ⊗			
_	3-1	33	10	10							7				
5—	S-2	SS	18	10							7 8	14-⊗			
_	3-2	33	10	10							6				
_					(CL) GRAVELL Moist to Wet, N	Y LEAN CLAY, Medium Stiff to S	Brow tiff	nish Gray,							
-	S-3	SS	18	8	,					∇	4 7	13-⊗			
10										=	6				
_	1														
-												/			
_	S-4	SS	18	18							5 5	8-8			
15—											3				
_															
-					(CL) SANDY L Gray, Wet, Stif	EAN CLAY, Cor	ntains	Wood,							
_	S-5	SS	18	14	Gray, Wot, Oth	'					4 7	10−⊗			
20			10	' '							3				
_	1														
_					(SC) CLAYEY Wet, Medium D	SAND WITH GF	RAVEI	L, Gray,							
_	S-6	SS	18	10	vvct, Mcdidiii L	701130					10 13		22		
25 —	3-0	33	10	10							9		22 0		
_															
_					(CH) FAT CLA Medium Stiff to	Y, Gray to Brown	nish F	Red, Moist,							
_	S-7	SS	18	16	Wediam Still to	very Sun					20 15		26-€	7	
30 —	3-7	33	10	16							11		20 0	У	
	7	1	1	1	•						C	JUNITNC	ED O	N NEX	T PAGE.
	TH	E STR	ATIFIC	CATION	I LINES REPRESENT	THE APPROXIMATE	BOUN	DARY LINES E	BETWEEN	SOIL T	YPES. IN	I-SITU THE TRAN	NSITION M	IAY BE GRAD	DUAL.
≟ Mr	9.50			ws□	WD 🗌	BORING STARTED		10/08/14							
₩ WL(I	BCR)		<u>¥</u>	WL(AC	CR)	BORING COMPLET	TED	10/08/14			CAV	'E IN DEPTH			
₩ WL						RIG 55 LC ATV		FOREMAN	Nadal		DRI	LLING METHOD	3.25 HS	SA/MUD R	OTARY

CLIENT							JOB#		BORII	NG #			SHEET		
Alexa	ndria	<u>No</u>	rth	Term	ninal, LLC		1	3983-B		B-	12		2 OF 2		Pa
Robin	son	Terr	nin	al No	orth - Final Ge	otechnical			=n						
Study SITE LOC	ATION						<u> Enie</u>	<u>rt-Bryan</u>					-()- CALIBRATED F	PENETROME	TER TONS/FT ²
500 N	<u>. Un</u>	ion (Stre	et, A	Mexandria, Cit	y of Alexand	dria						ROCK QUALITY DE		
NORTHIN	G			EASTIN	id .	STATION							RQD% - — -		
		PE	ST. (IN)	(IN)	DESCRIPTION OF M.				H UNITS	/ELS	(FT)			WATER INTENT%	LIQUID LIMIT%
ОЕРТН (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	VEF	BOTTOM OF CASING		LOSS	OF CIRCULAT	ION <u>/</u> 100/	WATER LEVELS	ELEVATION (FT)	BLOWS/6"		RD PENETRA	TION
DEF	SAN	SAN	SAN	REC	(CH) FAT CLA		wnish F	Rad Moist	///	WA		BLC	BI	_OWS/FT	
_					Medium Stiff to	Very Stiff	WIIISIII	iea, ivioisi,							
_												•			
35 	S-8	SS	18	14								9 11 10	21-04-	—————————————————————————————————————	- — 75
35														00.0	
_															
_												4			
40 —	S-9	SS	18	12								5 7	12-🛇		
_															
												3			
45 	S-10	SS	18	14								6	8-⊗		
_															
	S-11	ss	18	10								6 4	12∵⊗		
50 —	0 11			10								8	12 0		
_															
	S-12	ss	18	16								5 9	20-⊗		
55 												11			
_													\	\	
	S-13	SS	18	16								7 11 17	28	-	
60 —					END OF BORI	NG @ 60.00'						17			
	l	ı		1 1	l					I	I		<u> </u>	ii_	;
	THI	STR	ATIFIC	CATION	LINES REPRESENT	THE APPROXIMAT	TE BOLINI	DARY LINES P	ETWFFN	SOII -	TYPE	3. IN-	SITU THE TRANSITION N	MAY BE GRADI	JAL.
¥ w∟ s		_ 3.10		ws 🗆	WD 🗆	BORING STARTE		10/08/14						JE GITADO	
₩ WL(B			<u></u>	WL(AC	R)	BORING COMPLI	ETED	10/08/14			-	CAVE	IN DEPTH		
₩L						RIG 55 LC AT	V	FOREMAN	Nadal		1	ORILI	LING METHOD 3.25 H	SA/MUD RO	DTARY

Boring N	Number:	ICOR-S	B1			Page 1 of 1
Location				minal North	Date and Time: 10/8/13	7:30
Site Add	lress:		Union		Total Depth of Boring:	15'
			dria, V		Depth to Groundwater:	4'
Project	Number:	13-CI.0			Geologist/Scientist:	M. Bruzzesi
Drill Rig	Туре:	Direct-	-Push		Driller:	G. Burke
Samplin	g Equipment:	Track-	Mount	ed GeoProbe 6620DT	ICOR, Ltd.	•
Borehol	e Diameter:	2-inch			PO Box 406, Middleburg	g, VA 20118
Depth	Sample	PID	USCS	Description	Notes	
1				0-3" Grass and roots. 3"-4.75' Dark brown and black FILL comprised of	Dry. No odors.	
3		0.0		intermixed FC. SAND, Gravel, Cinder, and little SILT.	,	
4	ICOR-SB1(3-4)	0.0				
5				4.75'-6' Reddish brown FC. SAND with little SILT.	Wet. No odors.	
6 7				6'-9' Gray silty F. SAND with little CLAY.	Wet. No odors.	
8						
9				9'-15' Gray rounded GRAVEL with little F. SAND.	Wet. No odors.	
10 11				o to day realized divinity manneau 1.5 miles		
12						
13						
14 15						
15						
16					Boring terminated at 15'. Temporary well installed to 13.5'. Well	constructed of 1"
17 18					diameter new, dedicated, and disposabl screen).	
19						
20						
21						
22						
24						
25						

Boring N	Boring Number: ICOR-SB2		B2			Page 1 of 1
Location				minal North	Date and Time: 10/8/13	7:45
Site Add	lress:			Street	Total Depth of Boring:	15'
		Alexan			Depth to Groundwater:	6'
Project	Project Number:)1		Geologist/Scientist:	M. Bruzzesi
Drill Rig	Туре:	Direct-	Push		Driller:	G. Burke
Samplin	g Equipment:	Track-I	Mounte	ed GeoProbe 6620DT	ICOR, Ltd.	
Borehol	e Diameter:	2-inch			PO Box 406, Middleburg	, VA 20118
Depth	Sample	PID	USCS	•	Notes	
1 2 3		0.0		0-6" Concrete. 6"-14' Gray and dark brown fairly tight SILT with little F. SAND and very little CLAY.	Wet at 6'. Faint petroleum odors from 3 odors from 5'-10' (oil and gasoline).	'-5' (oil) and stronger
4	ICOR-SB2(3-4)	15.7				
5						
6	ICOR-SB2(5-6)	25.4				
7						
8						
9						
10				9'-15' Gray rounded GRAVEL with little F. SAND.	Wet. No odors.	
11						
12						
13 14				14'-15' Wood (timber, railroad tie, pile?).	Wet. Treated wood odor.	
15						
16					Boring terminated at 15'.	
17						
18						
19						
20						
21						
22						
23						
25						

Boring I	Number:	ICOR-S	B3			Page 1 of 1
Location				minal North	Date and Time: 10/8/13	8:15
Site Add		501 N.			Total Depth of Boring:	15'
		Alexan			Depth to Groundwater:	10'
Project Number: 13-CI.01					Geologist/Scientist:	M. Bruzzesi
Drill Rig	Туре:	Direct-	Push		Driller:	G. Burke
Samplin	g Equipment:	Track-I	Mounte	ed GeoProbe 6620DT	ICOR, Ltd.	•
Borehol	e Diameter:	2-inch			PO Box 406, Middleburg	, VA 20118
Depth	Sample	PID	USCS	•	Notes	
1 2		0.0		0-3" Grass and roots. 3"-4' Brown FILL comprised of intermixed BRICK, GRAVEL, FC. SAND, CONCRETE, and little SILT.	Dry. No odors.	
3 4		0.0				
5				4'-10' Gray silty F. SAND with little CLAY.	Moist. No odors.	
6 7		0.0				
8 9		0.0				
10		4.0				
11 12	ICOR-SB3(10.5-11.5)			10'-12' Black oil-stained FC. SAND with little SILT.	Wet. Oil staining and petroleum odors (ι	oil).
13				12'-15' Gray silty F. SAND with little CLAY.	Wet. No odors.	
14 15						
13					Boring terminated at 15'.	
16 17						
18						
19						
20 21						
22						
23						
24 25						

Boring N	Number:	ICOR-S	B4			Page 1 of 1
Location: Robinson Ter			minal North	Date and Time: 10/8/13	8:35	
Site Add		501 N.			Total Depth of Boring:	10'
		Alexan			Depth to Groundwater:	9'
		13-CI.0			Geologist/Scientist:	M. Bruzzesi
Drill Rig		Direct-	Push		Driller:	G. Burke
	g Equipment:	Track-I	Mounte	ed GeoProbe 6620DT	ICOR, Ltd.	•
Borehol	e Diameter:	2-inch			PO Box 406, Middleburg	g, VA 20118
Depth	Sample	PID	USCS	Description	Notes	
2		0.0		0-4" Gravel. 4"-4' Brown FILL comprised of intermixed GRAVEL, BRICK, FC. SAND and little SILT.	Dry. No odors.	
3		0.0				
5				4'-6' Brown FM. SAND with little SILT.	Moist. No odors.	
6 7		0.0		6'-10' Brown and reddish brown FILL comprised of intermixed BRICK, GRAVEL, FC. SAND, and little SILT.	Wet at 9'. No odors.	
8		0.0				
9						
11					Boring terminated at 10'.	
12						
13 14						
15						
16						
17 18						
19						
20						
21						
22						
24						
25						

Boring N	Number:	ICOR-S	B5			Page 1 of 1
Location				minal North	Date and Time: 10/8/13	9:10
Site Add	lress:		Union		Total Depth of Boring:	15'
			dria, V		Depth to Groundwater:	9.5'
Project Number:		13-CI.0			Geologist/Scientist:	M. Bruzzesi
Drill Rig	Type:	Direct-	Push		Driller:	G. Burke
Samplin	g Equipment:	Track-	Mount	ed GeoProbe 6620DT	ICOR, Ltd.	,
Borehol	e Diameter:	2-inch			PO Box 406, Middleburg	g, VA 20118
Depth	Sample	PID	USCS	Description	Notes	
1				0-8" Concrete.		
2		0.0		8"-6' Concrete debris.	Dry. No odors.	
3						
4		0.0				
5						
6 7	ICOR-SB5(6-7)	0.0		6'-9.5' Brown tight SILT and CLAY with little F. SAND.	Moist. No odors.	
8	1001(325(07)	0.0				
9						
10				9.5'-13' Brown FM. SAND with little SILT and very little CLAY.	Wet. No odors.	
11						
12						
13				13'-15' Brown tight SILT and CLAY with little F. SAND.	Wet No odors	
14				13 13 Brown agnt SET and CEAT WIGHT LEGET. SAND.	Wet. No odors.	
15						
16					Boring terminated at 15'.	
17					Temporary well installed to 14'. Well co diameter new, dedicated, and disposabl screen).	
18						
19						
20						
22						
23						
24						
25						

Boring Number: ICOR-SB6		B6			Page 1 of 1	
Location				minal North	Date and Time: 10/8/13	10:15
Site Add			Union		Total Depth of Boring:	15'
		Alexan			Depth to Groundwater:	6'
Project	Project Number: 13-CI.01)1		Geologist/Scientist:	M. Bruzzesi
Drill Rig	туре:	Direct-	Push		Driller:	G. Burke
Samplin	ng Equipment:	Track-I	Mount	ed GeoProbe 6620DT	ICOR, Ltd.	
Boreho	le Diameter:	2-inch			PO Box 406, Middleburg	g, VA 20118
Depth	Sample	PID	USCS		Notes	
1 2		0.0		0-6" Concrete. 6"-4' Brown very tight silty F. SAND with little CLAY.	Dry. No odors.	
3	ICOR-SB6(2-3)					
4		0.0		Al 4.25 Common debris	Day No aday	
5				4'-4.25' Concrete debris.	Dry. No odors.	
6		0.0		4.25'-8.5' Reddish brown FM. SAND with little SILT and CLAY.	Wet at 6'. No odors.	
7 8						
9				8.5'-12' Black organic-rich F. SAND with little to some SILT and very little CLAY.	Wet. No odors.	
10				Sich and very fittle CLAT.		
11						
12				AGUATI Carrick have a sike to CAND with likely CLAY	Web Esisten Analysis adams (sill forms	121 451
13				12'-15' Grayish brown silty F. SAND with little CLAY.	Wet. Faint petroleum odors (oil) from 1	12'-15'.
14 15						
13					Boring terminated at 15'.	
16 17					Temporary well installed to 13'. Well co	
18					diameter new, dedicated, and disposab screen).	le PVC (with 10' of
19						
20						
21						
22						
23						
24 25						

Boring Number:		ICOR-S	B7			Page 1 of 1
Location				minal North	Date and Time: 10/8/13	10:45
Site Add	dress:	500 N. Union Street			Total Depth of Boring:	15'
		Alexan	dria, V	A	Depth to Groundwater:	8.5'
Project	Number:	13-CI.0)1		Geologist/Scientist:	M. Bruzzesi
Drill Rig	Type:	Direct-	Push		Driller:	G. Burke
	ng Equipment:			ed GeoProbe 6620DT	ICOR, Ltd.	
	e Diameter:	2-inch			PO Box 406, Middlebur	g, VA 20118
Depth	Sample	PID	USCS	•	Notes	
2		0.0		0-8" Concrete. 8"-7' Brown and brownish gray tight F. SAND, SILT, and little CLAY.	Dry to moist. Faint petroleum odors (o	il) from 5'-7'.
3 4		23.0				
5						
6		155.0				
7		163.0		7 O El Croy E M CAND with little CUT	Moiet Strong - the laws - day (-1)	gocoline
8	ICOR-SB7(7.5-8.5)			7'-8.5' Gray FM. SAND with little SILT. 8.5'-15' Gray and reddish brown FM. SAND with little	Moist. Strong petroleum odors (oil and Wet. Strong petroleum odors (oil and g	
9				SILT and CLAY.	wet. Strong periodean oddio (on and g	asomicj.
10						
11						
12						
13						
14						
15					Boring terminated at 15'.	
16					Temporary well installed to 13'. Well co	onstructed of 1"
17 18					diameter new, dedicated, and disposab screen).	le PVC (with 10' of
19						
20						
21						
22						
23						
24						
25						

Boring Number: ICOR-SB8		B8			Page 1 of 1	
Location				minal North	Date and Time: 10/8/13	11:15
Site Add	dress:	500 N. Union Street			Total Depth of Boring:	15'
			Alexandria, VA		Depth to Groundwater:	9'
Project	Project Number: 13-CI.01			Geologist/Scientist:	M. Bruzzesi	
Drill Rig	туре:	Direct-	Push		Driller:	G. Burke
Samplin	ng Equipment:	Track-I	Mounte	ed GeoProbe 6620DT	ICOR, Ltd.	
Boreho	le Diameter:	2-inch			PO Box 406, Middleburg	g, VA 20118
Depth	Sample	PID	USCS	-	Notes	
1 2		46.1		0-8" Concrete. 8"-8' Brown and brownish gray tight SILT with some CLAY and little F. SAND.	Moist. Petroleum odors (oil and gasolin	ne) from 1'-8'.
3	ICOR-SB8(2-3)					
4		231.0				
5 6		357.0				
7		>451				
8	ICOR-SB8(7.5-8.5)					
9				8'-14.5' Grayish brown FM. SAND with some to little SILT and very little CLAY.	Wet at 9'. Strong petroleum odors (oil a	and gasoline).
10						
11						
12						
13 14						
15				14.5'-15' Reddish brown FM. SAND, SILT, and little CLAY.	Wet. Strong petroleum odors (oil and g	asoline).
16					Boring terminated at 15'.	
17					Temporary well installed to 13.5'. Well diameter new, dedicated, and disposab screen).	
18					,	
19						
20 21						
22						
23						
24						
25						

Boring I	Number:	ICOR-S	B9			Page 1 of 1
Location				minal North	Date and Time: 10/8/13	11:15
Site Add			Union		Total Depth of Boring:	20'
		Alexan			Depth to Groundwater:	15'
Project	Project Number:)1		Geologist/Scientist:	M. Bruzzesi
Drill Rig	Type:	Direct-	Push		Driller:	G. Burke
Samplin	g Equipment:	Track-I	Mounte	ed GeoProbe 6620DT	ICOR, Ltd.	•
Borehol	e Diameter:	2-inch			PO Box 406, Middleburg	g, VA 20118
Depth	Sample	PID	USCS	Description	Notes	
1				0-8" Concrete.		
2		1.1		8"-2' Dark brown FILL comprised of intermixed FM. SAND and brick.	Dry. No odors.	
3				2'-6' Brown F. SAND, SILT, and little to very little CLAY.	Dry. Faint petroleum odors (oil).	
4	ICOR-SB9(4-5)	1.0				
5	ICOR-SB9(4.5-5.5)	2.8				
6		1.1		6'-20' Dark brown FILL comprised of intermixed FM.	Wot at 15' No odors	
7		0.0		SAND and brick.	wet at 13. No odors.	
8						
9						
10						
11						
12 13						
14						
15						
16						
17						
18						
19						
20					Design to survive 1 + 201	
21					Boring terminated at 20'.	onetructed of 1"
22					Temporary well installed to 18'. Well co diameter new, dedicated, and disposab screen).	
23						
24						
25						

Boring I	Boring Number: ICOR-SB10		B10			Page 1 of 1
Location				minal North	Date and Time: 10/8/13	12:20
Site Add			Union		Total Depth of Boring:	15'
		Alexan			Depth to Groundwater:	8.5'
Project	Number:	13-CI.0			Geologist/Scientist:	M. Bruzzesi
Drill Rig	Type:	Direct-	Push		Driller:	G. Burke
Samplin	g Equipment:	Track-	Mounte	ed GeoProbe 6620DT	ICOR, Ltd.	•
Borehol	e Diameter:	2-inch			PO Box 406, Middleburg	g, VA 20118
Depth	Sample	PID	USCS	-	Notes	
1				0-8" Concrete.		
2		0.0		8"-5' Black and red FILL comprised of intermixed CINDER, BRICK, F. SAND, and SILT.	Dry. No odors.	
3	ICOR-SB10(2-3)					
4		0.0				
5				El 4 Al Linha modulinh horonom alinha ville El CANDO (11 1991)	M/st st 0 F1 N11	
6	ICOR-SB10(5.5-6.5)	0.0		5'-14' Light reddish brown tight silty F. SAND with little to some CLAY.	Wet at 8.5 . No odors.	
7		0.0				
8 9		0.0				
10						
11						
12						
13						
14				14'-15' Light gray clayey SILT.	Wet. No odors.	
15						
16					Boring terminated at 15'.	
17						
18 19						
20						
21						
22						
23						
24						
25						

Boring Number: ICOR		ICOR-S	B11			Page 1 of 1
Location		Robinson Terminal North			Date and Time: 10/8/13	12:45
Site Add		500 N.			Total Depth of Boring:	15'
		Alexan			Depth to Groundwater:	13'
Project Number:		13-CI.C)1		Geologist/Scientist:	M. Bruzzesi
Drill Rig		Direct-			Driller:	G. Burke
	g Equipment:		Mounte	ed GeoProbe 6620DT	ICOR, Ltd.	
_	e Diameter:	2-inch			PO Box 406, Middlebur	g, VA 20118
Depth	Sample	PID	USCS	Description 0-8" Concrete.	Notes	
2		0.0		8"-2' Gray and reddish brown FILL comprised of intermixed SILT, BRICK, F. SAND, and little CLAY. 2'-5' Black CINDER and BRICK.	Dry. No odors. Dry. No odors.	
3 4		0.0				
5						
6	ICOR-SB11(5.5-6.5)	0.0		5'-15' Brown and grayish brown silty CLAY and clayey SILT with little F. SAND.	Wet at 13'. No odors.	
7 8		0.0				
9						
10						
11						
12						
13 14						
15						
16					Boring terminated at 15'.	
17					Temporary well installed to 14'. Well co diameter new, dedicated, and disposab screen).	
18 19						
20						
21						
22						
23 24						
25						

Boring N	Number:	ICOR-S	B12			Page 1 of 1
Location				minal North	Date and Time: 10/8/13	13:15
Site Add	lress:	500 N. Union Street			Total Depth of Boring:	15'
	Alexa		dria, V		Depth to Groundwater:	10'
Project	Project Number:)1		Geologist/Scientist:	M. Bruzzesi
Drill Rig	Туре:	Direct-	-Push		Driller:	G. Burke
Samplin	g Equipment:	Track-	Mount	ed GeoProbe 6620DT	ICOR, Ltd.	
Borehol	e Diameter:	2-inch			PO Box 406, Middlebur	g, VA 20118
Depth	Sample	PID	USCS	-	Notes	
1				0-8" Concrete.		
2				8"-4' Black and red CINDER and BRICK.	Dry. No odors.	
2		0.0				
3						
4		0.0				
5				4'-15' Light brown grading into gray tight silty CLAY	Wet at 10'. No odors.	
٦				with very little F. SAND.		
6		0.0				
_						
7	ICOR-SB12(6-7)					
8		0.0				
9						
10						
10						
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15						
					Boring terminated at 15'.	
16					borning terminated at 13.	
17						
17						
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24						
25						
		<u> </u>				

Boring N	Number:	ICOR-S	B13			Page 1 of 1
Location				minal North	Date and Time: 10/8/13	13:45
Site Add	dress:	500 N. Union Street			Total Depth of Boring:	15'
		Alexan			Depth to Groundwater:	9'
Project)1		Geologist/Scientist:	M. Bruzzesi
Drill Rig	Type:	Direct-	Push		Driller:	G. Burke
Samplin	g Equipment:	Track-I	Mounte	ed GeoProbe 6620DT	ICOR, Ltd.	
Borehol	e Diameter:	2-inch			PO Box 406, Middlebur	g, VA 20118
Depth	Sample	PID	USCS	Description	Notes	
1				0-8" Concrete. 8"-1.5' Brown tight SILT, F. SAND, and little CLAY.	Moist. No odors.	
2		0.0		1.5'-3' Dark brown intermixed CINDER, BRICK,	Dry. No odors.	
3				CONCRETE, and F. SAND. 3'-15' Light brown, light reddish brown, and gray FM.		
4		0.0		SAND with little to some SILT, and very little CLAY.		
5 6	ICOR-SB13(5.5-6.5)	0.0				
7	10011 3813(3.3 0.3)	0.0				
8		0.0				
9						
10						
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14						
15						
16					Boring terminated at 15'.	
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19 20						
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22						
23						
24						
25						

	Number:	ICOR-SB14				Page 1 of 1
Locatio				minal North	Date and Time: 9/7/16	13:50
Site Ad	dress:			Street	Total Depth of Boring:	5'
Droise	Number:	Alexandria, VA 16-CI.001		'A	Depth to Groundwater:	NA Pruzzosi
Drill Rig		Direct			Geologist/Scientist: Driller:	M. Bruzzesi E. Lindberg
	ng Equipment:			ed GeoProbe 6620DT	ICOR, Ltd.	L. Liliaberg
	le Diameter:	2-inch			PO Box 406, Middleburg	z. VA 20118
Depth	Sample	PID		Description	Notes	,,
1				0-8" Concrete.		
2	ICOR-SB14(1-2)	0.0		8"-1' Gray gravel sub-base.	Dry. No odors.	
3				1'-5' Light reddish brown FILL comprised of fairly tight silty CLAY with little F. SAND and very little C.	Dry. No odors.	
4				SAND and S. GRAVEL.		
5	ICOR-SB14(4-5)	0.0				
6					Boring terminated at 5'.	
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	Number:	ICOR-SB15				Page 1 of 1
Location				minal North	Date and Time: 9/7/16	7:50
Site Add	dress:	501 N. Union Street			Total Depth of Boring:	5'
		Alexandria, VA			Depth to Groundwater:	NA
Project Drill Rig	Number:	16-CI.001 Direct-Push			Geologist/Scientist: Driller:	M. Bruzzesi
	g Equipment:			ed GeoProbe 6620DT	ICOR, Ltd.	E. Lindberg
	e Diameter:	2-inch		Cu GCO110BC 0020B1	PO Box 406, Middleburg, VA 20118	
Depth	Sample	PID	USCS	Description	Notes	8,
				0-1' Gravel.		
1						
2	ICOR-SB15(1-2)	0.0		1'-5' Brown FILL comprised of intermixed FM. SAND, SILT, and little CLAY with some brick	Dry. No odors.	
_						
3						
4						
5		0.0				
6					Boring terminated at 5'.	
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30	1					
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32	1					
	1					
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34						
	1					
35	1					

Boring Number:		ECS-B	7			Page 1 of 1		
Location		Robins	son Ter	minal North	Date and Time: 9/7/16	14:40		
Site Add	lress:	501 N. Union Street			Total Depth of Boring:	6'		
		Alexandria, VA			Depth to Groundwater:	NA		
	Number:	16-CI.0			Geologist/Scientist:	M. Bruzzesi		
Drill Rig		Direct		LC D L CCOORT	Driller:	E. Lindberg		
	g Equipment:			ed GeoProbe 6620DT	ICOR, Ltd.	- VA 20110		
	e Diameter:	2-inch	USCS	Description	PO Box 406, Middleburg Notes	g, VA 20118		
Depth	Sample	PID	USCS	0-8" Concrete.	Notes			
1								
2	ECS-B7(1-2)	0.0		8"-1' Gray gravel sub-base.	Dry. No odors.			
	, ,			1'-6' Black FILL comprised of intermixed FC. SAND,	Dry Eaint chemical odors			
3				S. GRAVEL, and little SILT.	bry. Functionical odors.			
4								
-								
5								
c	FCC D7/F C)							
6	ECS-B7(5-6)	0.0						
7					Boring terminated at 6'.			
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26	1							
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35								

	Number:	MiHpt				Page 1 of 1
Locatio				minal North	Date and Time: 9/6/16	15:40
Site Ad	aress:		. Union		Total Depth of Boring:	5'
Project	Number:	Alexandria, VA 16-CI.001			Depth to Groundwater: Geologist/Scientist:	NA M. Bruzzesi
Drill Rig		Direct			Driller:	E. Lindberg
Samplii	ng Equipment:	Track-	Mount	ed GeoProbe 6620DT	ICOR, Ltd.	
	le Diameter:	2-inch			PO Box 406, Middleburg	, VA 20118
Depth	Sample	PID	USCS	Description 0-8" Concrete.	Notes	
1				0-8 Concrete.		
2	MiHpt-3(1-2)	0.0		8"-1' Gray gravel sub-base.	Dry. No odors.	
				1'-4' Brown and light brown FILL comprised of	Dry. No odors.	
3				intermixed FM. SAND and SILT.		
4						
_				4'-5' Purplish brown FILL comprised of fairly tight	Dry. No odors.	
5	MiHpt-3(4-5)	0.0		intermixed FM. SAND and SILT.		
6					Boring terminated at 5'.	
7						
′						
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		1.			T	
	Number:	MiHpt				Page 1 of 1
Location				minal North	Date and Time: 9/6/16	15:55
Site Add	aress:	501 N. Union Street			Total Depth of Boring: Depth to Groundwater:	5' NA
Proiect	Number:	Alexandria, VA 16-CI.001			Geologist/Scientist:	M. Bruzzesi
Drill Rig		Direct			Driller:	E. Lindberg
Samplin	g Equipment:	Track-	Mount	ed GeoProbe 6620DT	ICOR, Ltd.	
_	e Diameter:	2-inch			PO Box 406, Middlebu	rg, VA 20118
Depth	Sample	PID	USCS	Description 0-8" Concrete.	Notes	
1				0-8 Concrete.		
2	MiHpt-3(1-2)	0.0		8"-1' Gray gravel sub-base.	Dry. No odors.	
_				1'-4' Brown and light brown FILL comprised of	Dry. No odors.	
3				intermixed FM. SAND and little SILT.	Dry. No odors.	
4						
				4'-5' Black FILL comprised of fairly tight intermixed	Dry. No odors.	
5	MiHpt-3(4-5)	0.0		FC. SAND and and very little SILT.	,	
6					Boring terminated at 5'.	
		1				
7		1				
8	1					
9	1					
		1				
10		1				
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23		1				
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27		1				
28		1				
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29		1				
30		1				
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31		1				
32		1				
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33		1				
34		1				
35		1				
35						

Boring Number:		MiHpt-5				Page 1 of 1
Location				minal North	Date and Time: 9/7/16	10:00
Site Add		500 N.			Total Depth of Boring:	16'
			Alexandria, VA Depth to Groundwater:		7'	
Project	Number:	16-CI.001			Geologist/Scientist:	M. Bruzzesi
Drill Rig	Туре:	Direct-			Driller:	E. Lindberg
	g Equipment:		Mount	ed GeoProbe 6620DT	ICOR, Ltd.	
	e Diameter:	2-inch			PO Box 406, Middlebur	g, VA 20118
Depth	Sample	PID	USCS	Description	Notes	
1				0-8" Concrete.		
_				8"-1' Gray gravel sub-base.	Dry. No odors.	
2	MiHpt-5(1-2)	0.0				
3				1'-9' Black and dark brown FILL comprised of	Wet at 7'. No odors.	
				intermixed FC. SAND, S. GRAVEL, and little SILT.		
4						
5		0.0				
		0.0				
6						
_						
7						
8						
9						
10		0.0		9'-16' Brown FM. SAND with little to some SILT and CLAY.	Wet. No odors.	
				CLAT.		
11						
12						
12						
13						
4.4						
14						
15						
16						
17					Boring terminated at 16'.	
					Permanent well installed to 16'. Well	constructed of 1"
18					diameter new, dedicated, and disposa	
19					screen).	
13						
20						
21						
21						
22						
	1					
23	1					
24						
25						
26	1	1				
20	1					
27	1					
20	1					
28	1					
29	1					
30	1	1				
31	1					
	1					
32	1					
33	1					
55	1					
34	1					
25	1	1				
35						

Boring N	lumber:	MiHpt				Page 1 of 1
Location				minal North	Date and Time: 9/6/16	15:20
Site Add	lress:	501 N. Union Street			Total Depth of Boring:	5'
D	NI	Alexandria, VA			Depth to Groundwater:	NA .
Project Drill Rig	Number:	16-CI.001			Geologist/Scientist: Driller:	M. Bruzzesi E. Lindberg
	g Equipment:	Direct-Push Track-Mounted GeoProbe 6620DT			ICOR, Ltd.	L. Liliubeig
	e Diameter:	2-inch			PO Box 406, Middlebur	g, VA 20118
Depth	Sample	PID	USCS		Notes	
1				0-8" Concrete.		
,	A 5'11 + C(4 2)			8"-1' Gray gravel sub-base.	Dry. No odors.	
2	MiHpt-6(1-2)	0.0		1'-2.5' Light brown FILL comprised of intermixed F	Dry No odors	
3				M. SAND and GRAVEL.		
4				2.5'-5' Black and dark brown FILL comprised of intermixed FC. SAND and GRAVEL.	Dry. No odors.	
5	MiHpt-6(4-5)	0.0				
					Boring terminated at 5'.	
6						
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Boring N	Number:	MiHpt	:-7			Page 1 of 1
Location	n:	_		minal North	Date and Time: 9/6/16	14:00
Site Add	dress:	501 N. Union Street			Total Depth of Boring:	17'
D	NII.	Alexandria, VA			Depth to Groundwater:	8'
	Number:	16-CI.001 Direct-Push			Geologist/Scientist:	M. Bruzzesi
Drill Rig	g Equipment:	_		ed GeoProbe 6620DT	Driller: ICOR, Ltd.	E. Lindberg
	e Diameter:	2-inch		CG GCG1103C 002031	PO Box 406, Middleburg	g. VA 20118
Depth	Sample	PID	USCS	Description	Notes	<u> </u>
1	1			0-8" Concrete.		
				8"-1' Gray gravel sub-base.	Dry. No odors.	
2	MiHpt-7(1-2)	0.0		6 -1 Gray graver sub-base.	bry. No odors.	
3				1'-2' Light brown FILL comprised of FM. SAND,	Dry. No odors.	
				GRAVEL, and SILT. 2'-5' Black FILL comprised of intermixed FC. SAND,		
4				GRAVEL and little SILT with some brick fragments.		
5		0.0				
				5'-8' Black FC. SAND with little SILT.	Wet at 8'. Faint petroleum odors.	
6				S G SIGGRAT G. SANTO WALL MILE SIZE	Treat de la France petroleum ouoisi	
7						
		1				
8	MiHpt-7(7-8)	1				
9		1		8'-10' Pale brown F. SAND with little M. SAND and very little SILT.	Wet. No odors.	
				very little SIL1.		
10		0.0				
11				10'-12.5' Dark gray and black fairly tight silty CLAY.	Wet. Faint swamp odors.	
12						
13				12.5'-17' Grayish brown F. SAND with very little	Wet. No odors.	
				SILT.		
14						
15						
16						
17						
					Boring terminated at 17'.	
18						
19					Permanent well installed to 17'. Well diameter new, dedicated, and disposa	
					screen).	or in the first series
20						
21						
22						
23		1				
,,		1				
24		1				
25		1				
20		1				
26		1				
27		1				
28		1				
20		1				
29		1				
30		1				
30		1				
31		1				
32		1				
32		1				
33		1				
24		1				
34		1				
35		1				

Boring Number: Mi		MiHpt	-8			Page 1 of 1
Location				minal North	Date and Time: 9/6/16	10:40
Site Add	ress:		Union		Total Depth of Boring:	40'
Project I	Number:	16-CI.	ndria, V 201	A	Depth to Groundwater: Geologist/Scientist:	7' M. Bruzzesi
Drill Rig		Direct-			Driller:	E. Lindberg
	g Equipment:			ed GeoProbe 6620DT	ICOR, Ltd.	
Depth	e Diameter: Sample	2-inch	USCS	Description	PO Box 406, Middleburg Notes	g, VA 20118
1	Sumple	110	0303	0-8" Concrete.	itotes	
1				8"-1' Gray gravel sub-base.	Dry. No odors.	
2		0.0		2 2 314) 6,013,134	.,,	
3				1'-9.5' Gray and brown FILL comprised of intermixed F C. SAND, SILT and CLAY with some brick fragments.	Dry to moist. Faint swamp odors.	
4						
5	MiHpt-8(4-5)	0.0				
6						
7						
8						
9						
10		0.0		9.5'-11.5' Brown FILL comprised of SILT and CLAY with little F. SAND.	Moist. Faint swamp odor.	
11						
11				11.5'-12' Treated wood.	Strong creosote odors.	
12						
13				12'-15' Light brown and gray F. SAND with SILT and some to little CLAY.	Moist. Faint swamp odor.	
14						
				15'-17' Dark brown FM. SAND with some S. GRAVEL,	Wet. Faint swamp odor.	
15				SILT, and very little to no CLAY.	·	
16						
17						
				17'-40' Brown and grayish brown SILT and CLAY with	Wet. Faint swamp odor.	
18				very little to no F. SAND.		
19						
20						
21						
22						
23						
24						
24						
25						
26						
27						
28						
29						
30						
31						
32						
33						
34						
35						
36						
37						
38						
39	MiHpt-8(37.8-38.8)					
40	1					
					Boring terminated at 40'.	
41						netrueted -f 4"
42					Permanent well installed to 20'. Well co diameter new, dedicated, and disposable	
43					screen).	
					Deep groundwater sample collected from	n well point screen
44					deployed from 36.5'-40'.	

Boring Number: Location: Site Address: Project Number: Drill Rig Type: Sampling Equipn Borehole Diamet 2 3 4 5 6 7 8 9 10 11 12	Rob 501 Alex : 16-0 Dire ment: Trac ster: 2-in	N. Union kandria, V Cl.001 ect-Push ck-Mount	ed GeoProbe 6620DT	Date and Time: 9/6/16 Total Depth of Boring: Depth to Groundwater: Geologist/Scientist: Driller: ICOR, Ltd. PO Box 406, Middlebu Notes	
Site Address: Project Number: Drill Rig Type: Sampling Equipm Borehole Diamet 2 3 4 5 6 7 8 9 10 11	501 Alex : 16-0 Dire ment: Trac ter: 2-in	N. Union kandria, V CI.001 ect-Push ck-Mount	Street A ed GeoProbe 6620DT	Total Depth of Boring: Depth to Groundwater: Geologist/Scientist: Driller: ICOR, Ltd. PO Box 406, Middlebu	28.5' NA M. Bruzzesi E. Lindberg
Project Number: Drill Rig Type: Sampling Equipm Borehole Diamet 2 3 4 5 6 7 8 9 10 11	Alex : 16-0 Dire ment: Trac ter: 2-in	kandria, V CI.001 ect-Push ck-Mount ich	ed GeoProbe 6620DT	Depth to Groundwater: Geologist/Scientist: Driller: ICOR, Ltd. PO Box 406, Middlebu	NA M. Bruzzesi E. Lindberg
Drill Rig Type: Sampling Equipn Borehole Diamet Depth Sam 1 2 3 4 5 6 7 8 9 10 11	: 16-0 Dire ment: Trac ster: 2-in	CI.001 ect-Push ck-Mount ech	ed GeoProbe 6620DT	Geologist/Scientist: Driller: ICOR, Ltd. PO Box 406, Middlebu	M. Bruzzesi E. Lindberg
Drill Rig Type: Sampling Equipn Borehole Diamet Depth Sam 1 2 3 4 5 6 7 8 9 10 11	Direment: Traceter: 2-in	ect-Push ck-Mount ch		Driller: ICOR, Ltd. PO Box 406, Middlebu	E. Lindberg
Sampling Equipm Borehole Diamet Depth Sam 1 2 3 4 5 6 7 8 9 10 11	ment: Traceter: 2-in	ck-Mount ich		ICOR, Ltd. PO Box 406, Middlebu	
Depth Sam 1 2 3 4 5 6 7 8 9 10 11			Description		rg, VA 20118
1 2 3 4 5 6 7 8 9 10 11	pple Pil	D USCS	Description	Notes	
2 3 4 5 6 7 8 9 10					
13 14 15 16 17 18 19 20 21 22 23 24 25 MiHpt-10(26 27 28 29 30 31 32	0(24.5-25.5)		23'-28' Black silty F. SAND and CLAY.	Discrete sampler used to collect sam No odors. Boring terminated at 28.5'. Deep groundwater sample collected deployed from 25'-28.5'.	
32 33 34 35					

	Number:	MiHpt				Page 1 of 1
Locatio				minal North Street	Date and Time: 9/7/16 Total Depth of Boring:	12:45 5'
Site Ad	aress:				Depth to Groundwater:	5'
Project	Number:				Geologist/Scientist:	M. Bruzzesi
Drill Rig		Direct			Driller:	E. Lindberg
	ng Equipment:			ed GeoProbe 6620DT	ICOR, Ltd.	
	le Diameter:	2-inch		Danasis di au	PO Box 406, Middleburg	, VA 20118
Depth	Sample	PID	USCS	Description 0-8" Concrete.	Notes	
1						
2	MiHpt-12(1-2)	0.0		8"-1' Gray gravel sub-base.	Dry. No odors.	
3				1'-2' Black FILL comprised of intermixed FM. SAND with little C. SAND and SILT.	Dry. No odors.	
4				2'-4.5' Pale brown FILL comprised of fairly tight silty CLAY with very little to no F. SAND.	Moist. No odors.	
5		0.0		4.5'-5' Pale brown FILL comprised of F. SAND and very little M. SAND and little to no SILT.	Wet at 5'. No odors.	
6					Boring terminated at 5'.	
7						
8						
9						
10 11						
12						
13						
14						
15						
16						
17						
18						
19						
20 21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						
32 33						
34						
35						

Boring Number:		MiHpt-13				Page 1 of 1
Location	1:			minal North	Date and Time: 9/7/16	15:15
Site Add	lress:			Street	Total Depth of Boring:	5'
		Alexandria, VA			Depth to Groundwater:	NA
	Number:	16-CI.			Geologist/Scientist:	M. Bruzzesi
Drill Rig	g Equipment:	Direct		ed GeoProbe 6620DT	Driller: ICOR, Ltd.	E. Lindberg
	e Diameter:	2-inch		ed deor robe 0020D1	PO Box 406, Middlebur	σ VΔ 20118
Depth	Sample	PID	USCS	Description	Notes	6) 1/120220
				0-8" Concrete.		
1						
2	MiHpt-13(1-2)	0.0		8"-1' Gray gravel sub-base.	Dry. No odors.	
3				1'-2.5' Black FILL comprised of intermixed FC. SAND, S. GRAVEL, and little SILT.	Dry. No odors.	
4				2.5'-4' Dark reddish brown FILL comprised of fairly tight silty F. SAND with little CLAY.	Dry. No odors.	
5	MiHpt-13(4-5)	0.0		4'-5' Black FILL comprised of intermixed FC. SAND, S. GRAVEL, and little SILT.	Dry. Faint chemical odors.	
6					Boring terminated at 5'.	
7						
8						
9						
10						
11						
12						
13						
14						
15 16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						
32 33						
34						
35						

	Number:	MiHpt				Page 1 of 1
Location		_		minal North	Date and Time: 9/8/16	7:35
Site Add	iress:			Street	Total Depth of Boring:	28.5'
Project	Number:	16-CI.	ndria, V 001	^	Depth to Groundwater: Geologist/Scientist:	10' M. Bruzzesi
Drill Rig		Direct-			Driller:	E. Lindberg
	g Equipment:	Track-	Mount	ed GeoProbe 6620DT	ICOR, Ltd.	
	e Diameter:	2-inch			PO Box 406, Middlebu	rg, VA 20118
Depth	Sample	PID	USCS	Description 0-8" Concrete.	Notes	
1				U-8" Concrete.		
2	MiHpt-14(1-2)	0.0		8"-1' Gray gravel sub-base.	Dry. No odors.	
-				1'-5' Black and dark brown FILL comprised of	Dry. No odors.	
3				intermixed FC. SAND, GRAVEL, and little to some	bry. No odors.	
4				SILT.		
5	MiHpt-14(4-5)	0.0				
6	MiHpt-14(5-6)			5'-10' Light reddish brown fairly tight SILT with some CLAY and very little F. SAND.	Dry. No odors.	
			1	The state of the s		
7	1					
8			1			
9	1					
			1			
10		0.0				
11				10'-14.5' Brown silty CLAY with varying amounts of FC. SAND and small GRAVEL.	Wet. No odors.	
				T. C. SAND and Small GRAVEE.		
12						
13						
14						
17				14.5'-20' Brown to grayish brown fairly tight silty	Wet. No odors.	
15				CLAY.	Wet. No odors.	
16						
17						
17						
18						
19						
20						
21				20'-28.5' Brown FC. SAND grading into F.C. SAND with small to medium rounded gravel.	Wet. No odors.	
22			1			
23						
24						
25						
23						
26	MiHpt-14(25-26)					
27						
]						
28					Poring terminated at 20 Fl	
29					Boring terminated at 28.5'.	
30					Permanent well installed to 16'. We diameter new, dedicated, and dispos	
					screen).	Papie LAC (MITH TO OL
31	1					
32					Deep groundwater sample collected deployed from 25'-28.5'.	from well point screen
33						
33						
34						
35						

Boring N	lumber:	MiHpt	-15			Page 1 of 1
Location		Robins	on Ter	minal North	Date and Time: 9/8/16	8:25
Site Add	lress:	500 N.	Union	Street	Total Depth of Boring:	16'
		Alexar	ndria, V	A	Depth to Groundwater:	8'
	Number:	16-CI.0	001		Geologist/Scientist:	M. Bruzzesi
Drill Rig	Туре:	Direct			Driller:	E. Lindberg
	g Equipment:			ed GeoProbe 6620DT	ICOR, Ltd.	
	e Diameter:	2-inch			PO Box 406, Middleburg	, VA 20118
Depth	Sample	PID	USCS	Description 0-8" Concrete.	Notes	
1				0-8 Concrete.		
2	MOULT 15/1 2)			8"-1' Gray gravel sub-base.	Dry. No odors.	
2	MiHpt-15(1-2)	0.0				
3				1'-4' Black and dark brown FILL comprised of fairly tight intermixed FM. SAND, GRAVEL, and SILT.	Dry. No odors.	
				, ,		
4						
5	MiHpt-15(4-5)	0.0		4'-5.5' Black FILL comprised of fairly tight intermixed FC. SAND and GRAVEL with little SILT.	Moist. No odors.	
				5.5'-10' Light brown fairly tight silty F. SAND with	Wet at 8'. No odors.	
6				some to little CLAY.	The cut of the cuers.	
7						
8						
9	1					
9	1					
10		0.0				
11				10'-16' Gray silty CLAY with little F. SAND.	Wet. No odors.	
11						
12						
13						
14						
15						
16						
					Boring terminated at 16'.	
17						
18					Permanent well installed to 16'. Well of diameter new, dedicated, and disposable	
					screen).	ile FVC (With 10 Of
19						
20						
21						
22						
	1					
23						
24	1					
	1					
25						
26						
27						
28						
20						
29	1					
30						
30						
31	1					
22	1					
32						
33						
24						
34						
35						

Boring N		MiHpt				Page 1 of 1
Location		_		minal North	Date and Time: 9/8/16	7:55
Site Add	dress:	_		Street	Total Depth of Boring:	10'
Duciost	Ni b. a.u.	_	ndria, V	'A	Depth to Groundwater:	7.5'
Drill Rig	Number:	16-CI.			Geologist/Scientist: Driller:	M. Bruzzesi E. Lindberg
	g Equipment:			ed GeoProbe 6620DT	ICOR, Ltd.	E. Liliaberg
	e Diameter:	2-inch		CG GCG1103C G02051	PO Box 406, Middlebur	g. VA 20118
Depth	Sample	PID	USCS	Description	Notes	g,
				0-8" Concrete.		
1						
2	MiHpt-16(1-2)	0.0		8"-1' Gray gravel sub-base.	Dry. No odors.	
3	1			1'-2' Black FILL comprised of intermixed FC. SAND, GRAVEL, and little SILT.	Dry. No odors.	
4				2'-3' Black and gray FILL comprised of intermixed F C. SAND, GRAVEL, SILT, and some brick fragments.	Dry. No odors.	
5	MiHpt-16(4-5)	0.0		3'-5' Light reddish brown fairly tight silty CLAY.	Dry. No odors.	
6				5'-7.5' Light gray and light reddish brown tight silty CLAY with little F. SAND.	Moist. No odors.	
,						
7						
8				7.5'-10' Gray and light reddish brown intermixed F M. SAND with little SILT and CLAY.	Wet at 7.5'. No odors.	
9	MiHpt-16(8-9)					
10		0.0				
11					Boring terminated at 10'.	
12						
13						
14						
15						
16						
17						
18						
19						
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21						
22						
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25						
26						
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31						
32						
33						
34						
35						

Boring	Number:	MiHpt	-17		1	Page 1 of 1
Locatio				minal North	Date and Time: 9/7/16	13:00
Site Add			. Union		Total Depth of Boring:	5'
		Alexar	ndria, V	Α	Depth to Groundwater:	NA
	Number:	16-CI.0			Geologist/Scientist:	M. Bruzzesi
Drill Rig	Type: ng Equipment:	Direct		ad GaoProha 6620DT	Driller: ICOR, Ltd.	E. Lindberg
	le Diameter:	2-inch		ed GeoProbe 6620DT	PO Box 406, Middlebui	g, VA 20118
Depth	Sample	PID	USCS		Notes	
1				0-8" Concrete.		
2	MiHpt-17(1-2)	0.0		8"-1' Gray gravel sub-base.	Dry. No odors.	
3				1'-2.5' Black FILL comprised of intermixed FM. SAND, S. GRAVEL, and little SILT.	Dry. No odors.	
4				2.5'-5' Pale reddish brown FILL comprised of fairly tight silty CLAY.	Moist. No odors.	
5	MiHpt-17(4-5)	0.0			Boring terminated at 5'.	
6 7						
8						
9						
10						
11						
12						
13						
14 15						
16						
17						
18						
19						
20						
21						
22						
23 24						
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26						
27						
28						
29						
30						
31						
32 33						
34						
35						

Boring I	Number:	MiHpt	-18			Page 1 of 1
Location				minal North	Date and Time: 9/7/16	13:25
Site Add				Street	Total Depth of Boring:	5'
			ndria, V	'A	Depth to Groundwater:	NA
	Number:	16-CI.			Geologist/Scientist:	M. Bruzzesi
Drill Rig	g Equipment:	Direct		ed GeoProbe 6620DT	Driller: ICOR, Ltd.	E. Lindberg
	e Diameter:	2-inch		00011020 002051	PO Box 406, Middlebu	
Depth	Sample	PID	USCS	Description	Notes	
1				0-8" Concrete.		
2	MiHpt-18(1-2)	0.0		8"-1' Gray gravel sub-base.	Dry. No odors.	
3				1'-5' Black FILL comprised of intermixed FM. SAND, S. GRAVEL, and little SILT.	Dry. No odors.	
4						
5		0.0				
6					Boring terminated at 5'.	
7						
8						
9						
10 11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23 24						
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35						

		Ta avec a	10		1	5 4 64
	Number:	MiHpt		rminal North	Data and Times 10/7/16	Page 1 of 1
Location Site Add				minal North Street	Date and Time: 9/7/16 Total Depth of Boring:	14:55 5'
Site Au	aress.		ndria, V		Depth to Groundwater:	NA
Project	Number:	16-CI.0			Geologist/Scientist:	M. Bruzzesi
Drill Rig		Direct			Driller:	E. Lindberg
	ng Equipment:			ed GeoProbe 6620DT	ICOR, Ltd.	
	le Diameter:	2-inch		5	PO Box 406, Middlebur	g, VA 20118
Depth	Sample	PID	USCS	Description 0-8" Concrete.	Notes	
1						
2	MiHpt-19(1-2)	0.0		8"-1' Gray gravel sub-base.	Dry. No odors.	
3				1'-5' Black and dark brown FILL comprised of intermixed FM. SAND, S. GRAVEL, and SILT.	Dry. Faint chemical odors.	
4						
5	MiHpt-19(4-5)	0.4			Boring terminated at 5'.	
6						
7						
8						
9 10						
11						
12						
13						
14						
15						
16						
17						
18						
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21						
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25 26						
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28						
29						
30						
31						
32						
33						
34						
35						

Portes !	Numbor	Miller	20			Dags 1 of 1
Locatio	Number:	MiHpt Robin		minal North	Date and Time: 9/8/16	Page 1 of 1
Site Ad				Street	Total Depth of Boring:	18'
			ndria, V		Depth to Groundwater:	9'
	Number:	16-CI.(Geologist/Scientist:	M. Bruzzesi
Drill Rig		Direct		ed GeoProbe 6620DT	Driller: ICOR, Ltd.	E. Lindberg
	ng Equipment: le Diameter:	2-inch		ed deortobe 0020D1	PO Box 406, Middlebur	g. VA 20118
Depth	Sample	PID	USCS	Description	Notes	B,
1				0-8" Concrete.		
2	MiHpt-20(1-2)	0.0		8"-1' Gray gravel sub-base.	Dry. No odors.	
3				1'-1.5' Brick fragments.	Dry. No odors.	
4				1.5'-9' Light reddish brown and black F. SAND with some SILT and little CLAY and some GRAVEL.	Wet at 9'. No odors.	
5	MiHpt-20(4-5)	0.0				
6						
7 8						
9						
10		0.0		9'-13.5' Light reddish brown F. SAND with some SILT and little CLAY.	Wet. No odors.	
11						
12						
13				13.5'-15' Dark brown FC. SAND with very little SILT.	Wet. Very faint chemical odors.	
14 15						
16						
17						
18						
19					Boring terminated at 18'. Permanent well installed to 18'. Well	constructed of 1"
20					diameter new, dedicated, and disposa screen).	
21						
23						
24						
25						
26						
27						
28						
29 30						
31						
32						
33						
34						
35						

Boring N	Number:	MiHpt	-21			Page 1 of 1
				minal North	Date and Time: 9/9/16	7:35
Site Add	lress:			Street	Total Depth of Boring:	28.5'
_			ndria, V	'A	Depth to Groundwater:	7'
	Number:	16-CI.			Geologist/Scientist: Driller:	M. Bruzzesi
Drill Rig	g Equipment:	Direct-		ed GeoProbe 6620DT	ICOR, Ltd.	E. Lindberg
	e Diameter:	2-inch		00011000000001	PO Box 406, Middleburg	z. VA 20118
Depth	Sample	PID	USCS	Description	Notes	3,
1	Ī			0-8" Concrete.		
_				011.41.6	Day No aday	
2	MiHpt-21(1-2)			8"-1' Gray gravel sub-base.	Dry. No odors.	
ء ا				1'-2.5' Black and dark brown FILL comprised of	Dry. No odors.	
3				intermixed FC. SAND, GRAVEL, SILT and some brick fragments.		
4						
5	MiHpt-21(4.5-5.5)	7.3		2.5'-5' Gray and light reddish brown fairly tight silty	Dry. No odors.	
5	Wiinpt-21(4.3-3.3)	7.5		CLAY with little to no F. SAND.		51.401
6				5'-11' Gray and reddish brown silty F. SAND with some to little CLAY.	Wet at 11'. Strong gasoline odors fron	n 5'-10'.
7						
′						
8						
9						
10	MiHpt-21(9-10)	10.5				
11	7					
11						
12				11'-21.5' Grayish brown tight SILT with F. SAND and little to some CLAY.	Wet. No odors.	
42						
13						
14						
4.5						
15						
16						
17						
17						
18						
10						
19						
20						
21						
21	1			24 51 20 51 20 51 20 51 20 51	Mak Na adam	
22	1			21.5'-28.5' Brown FC. SAND grading into F.C. SAND with small to medium rounded gravel.	wet. No odors.	
23	1					
25	1					
24	1					
25	MiHpt-21(24-25)					
2.5	wiii pt-21(24-23)					
26	1					
27	1					
	1					
28	1					
29	1				Boring terminated at 28.5'.	
25					Dormanont well installed as 4.61 34.11	constructed of all
30					Permanent well installed to 16'. Well diameter new, dedicated, and disposa	
31					screen).	
21					D	and the House State
32					Deep groundwater sample collected fr deployed from 25'-28.5'.	om well point screen
22						
33						
34						
	1					
35						

					T	
Boring N		MiHpt		· IN al	5 . I = 1	Page 1 of 1
Location				minal North	Date and Time: 9/9/16	9:40
Site Add	Iress:	500 N. Union Street			Total Depth of Boring:	28.5' 7'
Project I	Number:	16-CI.	idria, V.	A	Depth to Groundwater: Geologist/Scientist:	M. Bruzzesi
Drill Rig		Direct			Driller:	E. Lindberg
	g Equipment:			ed GeoProbe 6620DT	ICOR, Ltd.	
	e Diameter:	2-inch			PO Box 406, Middleburg	, VA 20118
Depth	Sample	PID	USCS	Description	Notes	
1				0-8" Concrete.		
2	MiHpt-22(1-2)			8"-1' Gray gravel sub-base.	Dry. No odors.	
3				1'-6' Gray and light reddish brown FILL comprised of SILT and CLAY with little F. SAND.	Dry. No odors.	
4						
5	MiHpt-22(4-5)	2.5				
6				6'-7.5' Black F. SAND with some to little SILT.	Wet at 7'. Strong gasoline odors.	
7				7.5'-19.75' Gray and dark brown silty CLAY with little	Wet. Strong gasoline and chemical odor	
9				to no F. SAND.		
10		7.4				
11						
12						
13						
14						
15 16		98.7				
17						
18						
19						
20	MiHpt-22(19-20)	287.0		19.75'-28.5' Brown FC. SAND grading into F.C. SAND with small to medium rounded gravel.	Wet. Very faint chemical odors in upper	1'.
21						
22						
23						
25	MiHpt-22(24-25)					
26						
27						
28					Roring terminated at 28 5	
29					Boring terminated at 28.5'. Permanent well installed to 16'. Well co	onstructed of 1"
30 31					diameter new, dedicated, and disposabl screen).	
32					Deep groundwater sample collected fro deployed from 25'-28.5'.	m well point screen
33					seproyed Horil 23 -20.3 .	
34						
35						

ATTACHMENT 4 HIGH RESOLUTION SITE EVALUATION REPORT



Report of High-Resolution Assessment for Robinson Terminal North Alexandria VA June 2016

Project Number 3239-2016-02

Prepared in collaboration with ICOR Limited for

CityInterests LLC by

COLUMBIA Technologies Rockville, Maryland

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COLUMBIA Technologies, LLC ONE Research Court, Suite 450 Rockville, MD 20850

For more information on COLUMBIA Technologies, SmartData Solutions®, and High-Resolution assessment tools and protocols visit http://www.columbiatechnologies.com or call 1-888-344-2704.

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- Figure 3 Area of Chlorinated VOC Response
- Figure 4 Area of Petroleum VOC Response
- Figure 5 Current Groundwater Laboratory Results
- Figure 6 Current Soil Laboratory Results
- Figure 7 East-West Cross-Section A-A'
- Figure 8 East-West Cross-Section B-B'
- Figure 9 East-West Cross-Section C-C'
- Figure 10 North-South Cross-Section D-D'
- Figure 11 North Boundary Cross-Section E-E'
- Figure 12 South Boundary Cross-Section F-F'
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Appendices

- Appendix A: Direct Sensing Equipment Description
- Appendix B: Interpretation of Qualitative Direct Sensing Data
- Appendix C: Quality Control Procedures

Appendix D: MiHpt Logs, Individual Scale

Appendix E: MiHpt Logs, Collective Scale

Appendix F: Current Laboratory Results

Conversion Factors

Inch/Ounce/Pound/PSI to international System of Units

Multiply	Ву	To obtain
	Length	
Inch (in.)	2.54	Centimeter (cm)
Inch (in.)	25.4	Millimeter (mm)
Foot (ft.)	0.3048	Meter (m)
	Volume	
Ounce (oz.)	29.6	Milliliters (ml)
Gallon (gal)	3.8	Liters (L)
Cubic Foot (cf)	28.32	Liters (L)
	Pressure	
Pounds per Square Inch (psi)	6.89	Kilopascals (kPa)
	Hydraulic Conductivity	
Feet per day (ft/day)	0.0003527	Centimeters per second (cm/sec)

Temperature in degrees Celsius (°C) is converted to degrees Fahrenheit (°F) as

$$(^{\circ}F) = (1.8 \times (^{\circ}C) + 32)$$

Datum

Horizontal and vertical coordinates are referenced form the World Geodetic System 1984 [EPSG:4326].

Supplemental Information

Electrical conductivity (EC) is provided in millisiemens per meter (mS/meter).

Concentrations of chemical constituents in water are provided in either milligrams per liter (mg/L) or micrograms per liter (µg/L).

Concentrations of chemical constituents in soil are provided in either milligrams per kilogram (mg/kg) or micrograms per kilogram (µg/kg).

Report of High-Resolution Assessment for Robinson Terminal North Alexandria VA June 2016

Summary of Results

COLUMBIA Technologies, LLC, in collaboration with ICOR Ltd (ICOR) conducted a high-resolution assessment of the Robinson Terminal North properties located at 1 and 101 Oronoco Street in Alexandria, VA, (the SITE) during the period 22 to 28 June, 2016.

The SITE has a long history of industrial and commercial use and is being considered for development into a multistory residential complex (eastern portion of the SITE) and multi-story residential and hotel complex (western portion of the SITE), both to include street-level retail and commercial use. Both complexes will also include at least one level of subsurface parking. No residential use on the first floor is currently anticipated.

Based on the findings of historical environmental assessments, hazardous materials requiring special handling and disposal prior to razing of the buildings are present in the buildings, at least three underground storage tanks (USTs) are buried at the SITE, and soil and groundwater beneath the SITE are impacted by the past industrial activities conducted at and adjacent to the SITE. Past activities of concern conducted at the SITE

include petroleum storage and fertilizer production. Adjacent site uses of concern include petroleum storage, chemical production, and coal gasification.¹

The goal of this investigation was to provide in high-resolution a detailed mapping of subsurface soil impacted with petroleum hydrocarbons and industrial chemicals. Additionally, the highresolution characterization technology provided a description of likely pathways for contaminant migration onto and across the site. The high-resolution information also helped to identify any potential data gaps in previous sampling at a lower resolution or scale. The accurate measurement of the depth of contamination provides an important input to the site planning of subsurface structures. Soil and groundwater sampling results following this highresolution profiling are provided in Appendix F.

This high-resolution assessment was conducted in accordance with the guidelines of references (A) and (B). The

1

¹ ICOR, Ltd. *Limited Phase II Environmental Site*Assessment. December 2014.

direct sensing data are comprised of combined Hydraulic Profiling Tool (HPT) and Membrane Interface Probe (MIP) measurements. This combined tool is referred to as a MiHpt.

Twenty-two (22) MiHpt soundings were at the locations shown in **Figure 2** as directed by **ICOR**. Elevated response was noted for both chlorinated and petroleum-based volatile organic compounds (VOCs) as shown in **Figures 3 and 4**. Contamination was observed from just below ground surface to approximately 25-ft below ground surface (bgs) as shown in **Figures 7 through 13**.

Elevated MIP-FID response was also noted adjacent to the property waterfront. The Flame Ionization Detector responds to organic carbon-hydrogen bonds and the response along the waterfront is likely from organic tidal influence.

The subsurface soils were characterized in the plume area using the Hydraulic Profiling Tool (HPT). Interbedded permeable and non-permeable soil layers were observed across the site. Multiple continuous zones of elevated permeability were observed providing pathways for contaminant migration.

Residual VOC contamination was measured in both high and low permeability soils. This is indicative of a mature plume with likely storage of contamination in the lower permeable soils that results in back-diffusion of contaminants into the more permeable soils.

Highly elevated electrical conductivity (EC) was noted shallow at several

locations. These elevated EC measurements are likely indicative of residual ionic solutions such as those applied with oxidation injection materials.

Cross sections in both the east-west and north-south directions were developed by ICOR. New soil and groundwater samples were obtained to correlate with the direct sensing results and identify the specific contaminant compounds contributing to the direct sensing responses. The laboratory results for the most current data provide by ICOR are provided in **Appendix F**.

Methods, Assumptions, and Procedures

The MIP soundings were advanced as a cross-section through the treatment area for the VOC contamination and at some boundary locations. The resulting footprint of VOC contamination measured by the twenty-two (22) MiHpt borings is shown in **Figure 2** as directed by **ICOR**. Elevated response was noted for both chlorinated and petroleum-based volatile organic compounds (VOCs) as shown in **Figures 3 and 4**.

COLUMBIA Technologies employed three primary chemical detectors on the MIP profiling. These include: a Photo Ionization Detector (PID), a Flame Ionization Detector, and an Electron Capture Detector (ECD).

The PID provides sensitivity to aromatic compounds (BTEX). The FID is a general detector useful for confirmation of high concentrations of organic compounds including those not measured by the PID.

The MIP-ECD is highly specific to halogenated compounds; as such, the MIP-ECD detects a broad spectrum of chlorinated VOCs, including TCE and its degradation products. The MIP-ECD detector responds to halogenated compounds to a detection limit of approximately 250 ppb.

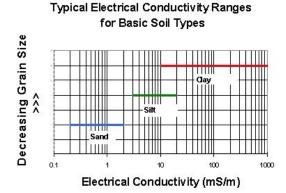
Together, the three detectors provide a reliable measurement for the presence of residual volatile organic compounds within the soil in the adsorbed, dissolved and vapor phase of contamination.

The Hydraulic Profiling Tool (HPT) was used to evaluate subsurface hydrostratigraphy, identifying higher permeability layers or heterogeneities that constitute preferential pathways for the movement of VOCs, and lower permeability layers that serve as storage zones for residual contamination.

The HPT pressure logs record measured changes in hydraulic pressure directly as water is pumped into the formation at a constant rate. These logs reveal the variability and relative hydraulic conductivity of the soil.

Electrical Conductivity (EC) is logged simultaneously with HPT pressure and the MIP analytical detector data. Variations in EC can also provide valuable insight into the stratigraphy of the subsurface. An increase in EC is typically indicative of finer-grained, less permeable soils.

General conductivity ranges for basic soil types are presented in the chart below (Geoprobe, 2015).



Together, the HPT and EC logs provide a powerful means of identifying more permeable heterogeneities in the

subsurface that provide preferential flow paths for contaminant migration.

The less permeable soils at the SITE will tend to limit the migration of residual and dissolved phase product. They also tend to provide long-term storage for residual NAPL and thus, serve as long-term sources of groundwater contamination.

As concentrations in higher permeability zones are reduced, the mass transfer process typically reverses, releasing contaminants from the lower-permeability zones into the higher-permeability zones (back-diffusion).

The technical team reviewed the high-resolution survey daily using the *SmartData Solutions®* real-time decision support system to iteratively refine the work plan with the project team and ensure the project objectives were met and completed on schedule.

Results and Discussion

Delineation of Chlorinated VOCs

The MIP-ECD was used together with the MIP-PID to delineate the chlorinated VOCs. The footprint of the cVOC contamination is presented in **Figure 3**. The vertical distribution of cVOCs is provided in **Figures 7 through 13**. The laboratory analytical results for soil and water samples obtained in the footprint identified concentrations of tetrachloroethylene and trichloroethylene above VDEQ action levels in groundwater samples taken at station M-21. These laboratory results are presented in **Appendix F**.

Delineation of Chlorinated VOCs

The MIP-FID was used together with the MIP-PID to delineate the petroleum hydrocarbon based VOCs as shown in **Figure 4**. The vertical distribution of petroleum hydrocarbon VOCs is provided in **Figures 7 through 13**. The laboratory analytical results for soil and water samples obtained in the footprint identified multiple petroleum hydrocarbon VOCs compounds including benzene, trimethylbenzene, and naphthalene above VDEQ action levels. These results are presented in **Appendix F**.

Quality Control

Each direct sensing instrument was operated in accordance with the manufacturer's standard operating procedures and the *Standard Practice for Direct Push Technology for Volatile Contaminant Logging with the Membrane Interface Probe (MIP)* ASTM STANDARD D7352 – 07.

Performance testing was performed on each system prior to and following each survey sounding. These procedures are outlined in **Appendix C.**

A thorough QC review of the MiHpt logs revealed no anomalies.

Conclusions

- Both chlorinated and petroleum hydrocarbon based VOCs above VDEQ action levels are present to a depth of 25-ft below grade from the western border of the assessment area, underneath the western building (101 Oronoco St), and continue to approximately Union Street to the east.
- Elevated electrical conductivity response indicating an ionic or metallic material was noted shallow, < 10-ft below grade the building (1 Oronoco St.) between Union Street and the waterfront.
- 3. Multiple continuous zones of hydraulic permeability were observed providing pathways for contaminant migration.
- Elevated MIP-FID response was also noted adjacent to the property waterfront. The Flame Ionization Detector responds to organic carbonhydrogen bonds and the response along the waterfront is likely from organic tidal influence.
- Inorganic contamination was not measured with the direct sensing equipment, however, laboratory analyses presented in **Appendix F** Identified inorganic contamination in both soil and water samples.

References

- (A) ASTM International. 2007. Standard Practice for Direct Push Technology for Volatile Contaminant Logging with the Membrane Interface Probe (MIP). ASTM D7352 07.
- (B) Geoprobe Technical Bulletin MK3010 Standard Operating Procedure for Geoprobe® Membrane Interface Probe (MIP) Revised: April 2012
- (C) ICOR, Ltd. *Limited Phase II Environmental Site Assessment*. December 2014.

APPENDIX A - Direct Sensing Equipment Description

LIF/UVOST® Equipment Description

The LIF system utilized for this investigation is the latest generation UVOST® system developed by Dakota Technologies, Inc. (DTI). The LIF-UVOST® system uses a highenergy laser to produce an ultraviolet light source for the detection of polycyclic aromatic hydrocarbons (PAHs).

The LIF-UVOST® system employs a excitation beam of light from a xenon chloride laser at 308 nanometer (nm) light pulsed at 50 megahertz. Any residual phase PAHs present in the soil matrix will absorb this photon energy in the form of fluorescence.

This fluorescence is returned to the optical detection system via a second silica fiber optic line, measured, and recorded in real time across four 50nm wavelength bins centered at 350, 400, 450, and 500 nm.

Individual LIF-UVOST® logs consist of a primary graph of total fluorescence as a %RE test standard versus depth, an information box and up to five waveform callouts. These callouts present the fluorescence intensity of each of the monitored wavelengths on the Y-axis [in microvolts (uV)]. The four peaks are due to the fluorescence at the four monitored wavelengths called channels. Each channel is assigned a color. Various non-aqueous phase liquids will have a unique waveform signature based on the relative amplitude of the four channels and/or the broadening of one or more of the channels.

The aforementioned wavelengths represent a common range of fluorescence associated with PAHs. Typically, the lighter fuels (jet fuel and gasoline) emit fluorescence at the

shorter wavelengths – 350 and 400 nm, while heavier, less distilled compounds such as bunker fuel or diesel fuel emit fluorescence at the longer wavelengths – 450 nm and 500 nm.

LIF/UVOST® screening is performed by pushing/hammering a shock protected optical cavity (SPOC) into the soil at the target rate of two centimeters per second (0.8 inches per second). As the SPOC is advanced, the total monitored fluorescence as well as the intensity and duration of the fluorescence at each of the four monitored wavelengths are recorded and displayed in real-time at one second intervals as a function of depth.

LIF/UVOST® system data is presented as a percentage of the normalized % Reference Emitter (RE) performance standard. This standard consists of a blend of Non-Aqueous Phase Liquid (NAPL) and produces a consistent fluorescence response over the four wavelengths monitored by the LIF/UVOST® system. Collected data is then presented as the %RE. Using the same RE at each location and site, allows normalization of data collected over several locations, sites, or screening events. The RE standard is provided by the equipment manufacturer and is the same for all LIF/UVOST® systems currently in operation.

Any fluorescence response is normally indicative of residual phase petroleum hydrocarbons, though some naturally occurring materials such as limestone will also fluoresce to a lesser and more monochromatic degree.

MIP/EC Equipment Description

The membrane interface probe with electrical conductivity (MIP/EC) probe is approximately 24 inches in length and 1.5-inches in diameter. The probe is driven into the ground at the nominal rate of 12 inches per minute

using direct push technology (DPT) system Geoprobe or equivalent.

The MIP/EC probe was developed by Geoprobe Systems[®] and contains two separate systems: the soil EC tool and the MIP. EC, MIP chemical response, MIP operating parameters, rate of push speed and temperature are collected by the MIP/EC Field Instrument, and displayed continuously in real time during each push of the probe.

EC: Soil electrical conductivity, the inverse of soil resistivity, is measured using a dipole arrangement. In this process, an alternating electrical current is transmitted through the soil from the center, isolated pin of the probe. This current is then passed back to the probe body. The voltage response of the imposed current to the soil is measured across these same two points. Conductivity is measured in Siemens/meter, and due to the low conductivity of earth materials, the EC probe uses milliSiemens/meter (mS/m). The probe is reasonably accurate in the range of 5 to 400 mS/m.

The electrical properties of soil vary by geological setting. Therefore, conductivity measurements will vary both in magnitude and the relative change from one soil type to another in each geological setting. In general, at a given location, lower conductivity values are characteristic of larger particles such as cobbles and sands, while higher conductivities are characteristic of finer sized particles such as finer sand, silts and clays. Observed conductivities significantly higher than 400 mS/m are indicative of ionic materials other than soil. Examples include saltwater intrusion, presence of ionic chemicals from storage or injection, or potentially soil mixtures with metallic compounds.

MIP: The MIP portion of the probe is used to create high resolution, real-time profiles of

subsurface volatile organic compounds (VOCs). The operating principle is based on heating the soil and/or water around a semipermeable polymer membrane to 121 degrees Celsius (°C), which allows VOCs to partition across this membrane. The MIP can be used in saturated or unsaturated soils, as water does not pass through the membrane. Nitrogen is used as an inert carrier gas, and travels from a surface supply down a transfer tubing which sweeps across the back of the membrane and returns any captured VOCs to the installed detectors at the surface. It takes approximately 60 seconds for the nitrogen gas stream to travel through 150 feet of inert tubing and reach the detectors.

COLUMBIA Technologies utilizes three chemical detectors on the MIP: a Photo Ionization Detector (PID), a Flame Ionization Detector (FID) and an Electron Capture Detector (ECD), or Halogen Specific Detector (XSD) mounted on a laboratory grade gas chromatograph (GC). The output signal from the detectors is captured by the MIP/EC data logging system installed on a laptop computer.

The PID detector consists of a special ultraviolet (UV) lamp mounted on a thermostatically controlled, low volume, flow-through cell. The temperature is adjustable from ambient temperature to 250 °C. The 10.2-electron volt (eV) UV lamp emits energy at a wavelength of 120 nm, which is sufficient to ionize most aromatics such as BTEX and many other molecules such as hydrogen sulfide (H₂S), hexane, and ethanol whose ionization potentials are less than 10.2 eV.

The PID also emits a response for chlorinated compounds containing double-bonded carbons (e.g. halogenated ethylenes), such as trichloroethylene (TCE) and tetrachloroethylene (PCE). Methanol and water, which have ionization potentials

greater than 10.2 eV, do not respond on the PID. Given that the PID is non-destructive, it is often run first in series with other detectors for multiple analyses from a single injection.

The FID utilizes a hydrogen flame to combust compounds in the carrier gas. The FID responds linearly over several orders of magnitude, and the response is very stable from day to day. This detector responds to any molecule with a carbon-hydrogen bond, but poorly to compounds such as H₂S, carbon tetrachloride, or ammonia. The carrier gas effluent from the GC column is mixed with hydrogen and burned. This combustion ionizes the analyte molecules. A collector electrode attracts the negative ions to the electrometer amplifier, producing an analog signal, which is directed to the data system input.

The ECD detector consists of a sealed stainless-steel cylinder containing radioactive Nickel-63. The Nickel-63 emits beta particles (electrons), which collide with the carrier gas molecules, ionizing them in the process. This forms a stable cloud of free electrons in the ECD cell. When electro-negative compounds (especially chlorinated, fluorinated or brominated molecules), such as carbon tetrachloride or TCE, enter the cell, they immediately combine with the free electrons, temporarily reducing the number remaining in the electron cloud. The detector electronics. which maintain a constant current of about 1 nanoampere through the electron cloud, are forced to pulse at a faster rate to compensate for the decreased number of free electrons. The pulse rate is converted to an analog output, which is transmitted to the data system.

The ECD detector provides for extremely sensitive detection of common contaminants such as PCE and TCE, typically in the range of 100-200 parts per billion (ppb) in-situ

concentrations for these compounds. However, the relatively small linear range of the detector as compared to the other detectors, the maximum response of the detector will be reached early, typically at insitu concentration of 1 to 2 parts per million (ppm) for these polychlorinated compounds. Additionally, ECD detector response varies considerably for different compounds. Of particular note the response factor of the ECD to polychlorinated compounds such as PCE is a factor of 1,000 to 10,000 as compared to dichloro compounds, such as the common degradation product cis-1,2dichloroethylene (DCE). Performance testing for the compounds of interest is critical to understanding the system response to in-situ chemical distributions.

HPT Equipment Description

The HPT probe is approximately 24 inches in length and 1.5-inches in diameter. The probe is driven into the ground at the nominal rate of 12 inches per minute using a DPT rig.

The HPT probe was developed by Geoprobe Systems[®] and contains two separate systems: soil EC and the HPT. EC, HPT parameters and temperature are collected by the HPT Field Instrument, and displayed continuously in real time during each push of the probe.

EC: Soil electrical conductivity, the inverse of soil resistivity, is measured using a Werner array arrangement. In this process, an electrical current is transmitted through the soil from two electrodes on the probe body. This current is then passed back to the probe, and the voltage response of the imposed current to the soil is measured across these points. Conductivity is measured in Siemens/meter, and due to the low conductivity of earth materials, the EC probe uses mS/m. The probe is reasonably

accurate in the range of 5 to 400 mS/m.

The electrical properties of soil vary by geological setting. Therefore, conductivity measurements will vary both in magnitude and the relative change from one soil type to another in each geological setting. In general, at a given location, lower conductivity values are characteristic of larger particles such as cobbles and sands, while higher conductivities are characteristic of finer sized particles such as finer sand, silts and clays. Observed conductivities significantly higher than 400 mS/m are indicative of ionic materials other than soil. Examples include saltwater intrusion, presence of ionic chemicals from storage or injection, or potentially soil mixtures with metallic compounds.

HPT: The HPT portion of the system is used to create high resolution, real-time profiles of soil hydraulic properties, which can be used to infer permeability and hydraulic conductivity. The HPT system consists of a controller, a pump, a transfer line (trunkline) which is pre-strung through the DPT rods, a pressure transducer, a permeable screen, and a field computer.

HPT screening is performed simultaneously with the EC logging. As the tool is advanced, water is pumped through the trunkline and passes into the soil through the permeable screen. The flow is regulated as to be as constant as possible. The pressure required to inject the constant flow of water into the soil, known as the HPT pressure, is monitored by the pressure transducer and recorded on the field computer in pounds per square inch (psi) versus depth. The flow rate of the water into the soil formation is also measured and recorded in milliliters per minute (mL/min) versus depth. Static pressure measurements (dissipation tests) can also be made by stopping at discrete

intervals, allowing users to determine the static water level. The dissipation test provides an estimate of the static water level, based on the hydraulic head imposed on the probe at rest as compared to the pressure measured at the surface prior to starting each location push. Dissipation tests are best run in coarser grained materials (sands and gravels) to assure that the local ambient hydrostatic pressure is measured quickly and accurately.

To perform a dissipation test, the HPT probe is advanced to a depth below the water table and the water flow is stopped. The pressure dissipation (reduction of pressure gradient caused by forcibly pumping water into the formation) is monitored until a stable value is observed. The dissipation usually takes the shape of a curve approaching an inflection point or stable value. The stable value is then used for the hydraulic pressure at that depth and can be used to estimate static water depth. The HPT software can also provide an estimate of K (a value used in hydrogeologic calculations) to provide an interpretation of the hydraulic permeability of the formation.

Depth in feet is measured and recorded using a precision potentiometer with a 100-inch linear range. The potentiometer is mounted onto the mast of the DPT rig and a counterweight anchored to the foot of the rig. Measurements are recorded on the down stroke of the mast, as the tooling string is pushed into the ground, and is accurate within 1/10th of an inch. The reference elevation (depth) reported for each individual boring is established by setting the data logger to zero feet with the sensing window of the downhole probe aligned with the ground surface. True boring elevations can be established with the addition of survey data if provided for in the scope of work.

APPENDIX B – Interpretation of Qualitative Direct Sensing Data

General MIP/EC Log Interpretation

Each MIP/EC log includes five separate graphs of data. The Y-axis on all graphs is depth. The first graph displays the EC, measured in mS/m. Small soil conductivity values are indicative of coarser grained particles, such as sands and silty sands, and larger soil conductivities are indicative of finer-grained particles, such as clays and silty clays. The next three graphs are displays of measures of chemical detector response: PID, FID, and ECD, measured in µV. These graphs are a linear scale, and provide a relative comparison of total detector response between boring locations. The fifth graph displays the temperature of the MIP/EC probe as it is pushed into the subsurface.

General HPT Log Interpretation

Each HPT log, presented on an individual scale, includes three separate graphs of data. The Y axis on all graphs is depth. The first graph displays HPT pressure in psi and flow rate measured in mL/min. In general, higher HPT pressure readings and lower flow rates indicate lower soil permeability, while lower HPT pressure readings and higher flow rate readings indicate higher soil permeability. The second graph shows estimated K value, in feet/day, indicating the hydraulic permeability of the formation. The static groundwater level is also displayed on the graphs. The third graph displays the EC, measured in mS/m. Lower soil conductivities are indicative of coarser grained particles, such as sands and silty sands, and higher soil conductivities are indicative of finer

grained particles, such as clays and silty clays.

The HPT pressure and electrical conductivity can be used to identify hydraulic permeable layers, confining units and preferential migration pathways. This information is useful for creating contaminate fate and transport models, selecting monitoring well location and screen intervals, and targeting zones for remedial injections.

Interpreting MIP Results and Comparison to Laboratory Analyses

A typically configured MIP system is effective at profiling the relative distribution of certain VOCs and relative soil types versus depth. The typical MIP system will detect VOCs with boiling points of 121 °C or less; with vapor pressures above approximately 0.14 psi; and with non-polar hydrophobic compound structures. The sensitivity or in-situ detection level of a MIP system is dependent on many different factors. COLUMBIA Technologies' systems and protocols are standardized to provide reliable and comparable detection and logging of chlorinated VOCs (CVOCs) on the order of 200 ppb in-situ concentrations. Petroleum based VOCs are reliably logged at 1 ppm in-situ concentrations. Each of COLUMBIA Technologies' MIP system configurations are performance tested prior to use and if requested, MIP systems may be specially configured for atypical compounds of concern (COCs) and site conditions.

An understanding of the principles of operation and performance of the configured MIP detectors is essential to properly interpreting the MIP log results. For example, a CVOC with an ionization potential greater than 10.6 eV will respond on the ECD detector but not on the PID equipped with a 10.6 eV lamp. A hydrophilic compound such

as an alcohol or ketone will normally be scrubbed out of the MIP gas stream by the MIP Membrane and the installed dryer and never reach the detectors. A CVOC with a small number of chlorine atoms such as vinvl chloride or DCE will have a lower response on the ECD than a CVOC containing three or four chlorine atoms. Each shortfall in detector or system performance can be overcome by properly configuring and testing the MIP system for the site specific COCs prior to use. Additionally, the in-field performance tests performed before and after each boring are critical to monitor the performance of the MIP system from the membrane through to the data logging system.

Generalized correlations between MIP response and laboratory sample results can be inferred, but cannot be viewed as a linear comparison. MIP response and laboratory results are collected, analyzed and reported in different units and by different procedures, so correlation is not an exact one-to-one comparison. For example, not all VOCs present and analyzed in laboratory instruments with compound separation are detected and measured by a typical MIP system. The MIP process uses a membrane extraction process from a heated zone of varying subsurface matrix of soil, water, and/or vapor. Soil and groundwater results involve the collection of a sample, extraction of sub-sample at the surface, and then transporting them to a laboratory for further extraction and analysis. These two processes are different by definition.

Unusual or invalid responses on the MIP system can result from malfunctions such as carrier or makeup gas leakage, gas flow blockage, heater failure, and carryover of water vapor or excessive chemical saturation. Each MIP detector will respond differently to

each of these malfunctions. The most common cause of false positive responses for CVOCs is water carryover or blockage of carrier gas flow. The most common causes of false negative are improperly adjusted gas flows or leakage and inoperative detectors. **COLUMBIA Technologies**' field geochemists are trained to recognize these problems and to take the appropriate corrective action in the field.

APPENDIX C – Quality Control Procedures

MIP/EC System Performance Test

As a quality control check, the MIP system response is evaluated prior to and upon completion of each MIP location. An aqueous phase performance test is performed using specific compounds designed to evaluate the sensitivity of the particular probe, transfer line and detector suite to be used. The resulting values are recorded and compared to predetermined values.

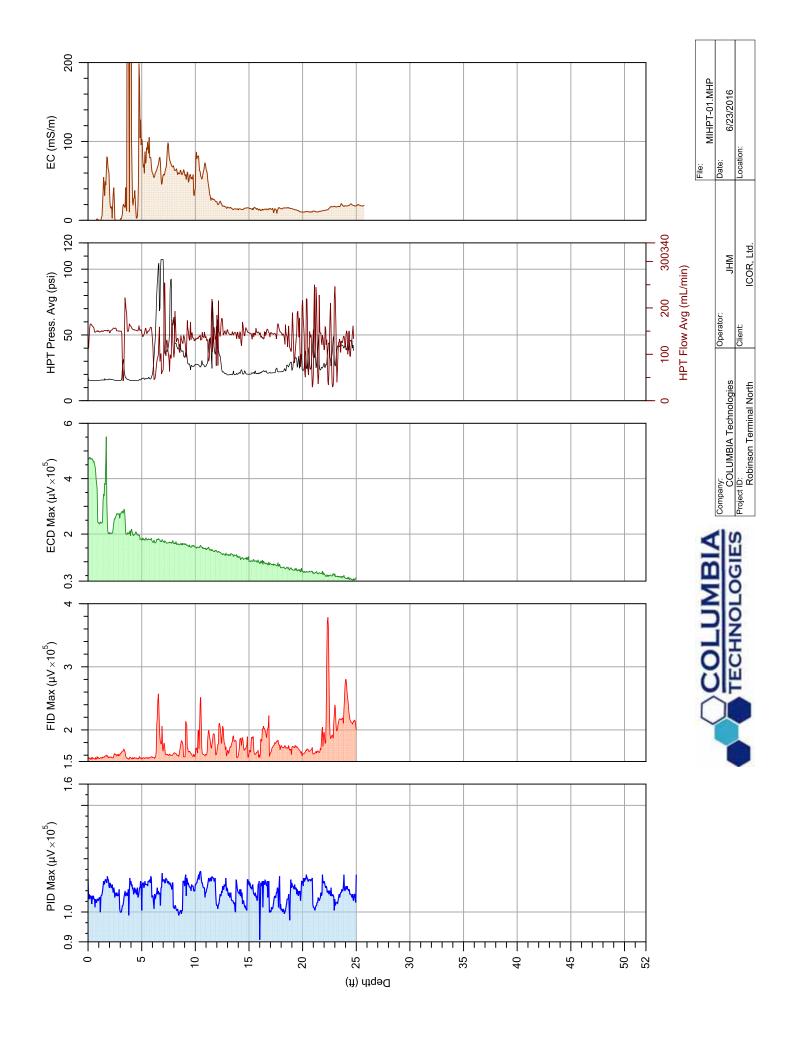
The EC dipole is also evaluated using a brass and stainless-steel test jig, resulting in known values of 55 and 290 mS/m. Results must fall within 10% of the expected values; otherwise corrective action must be performed.

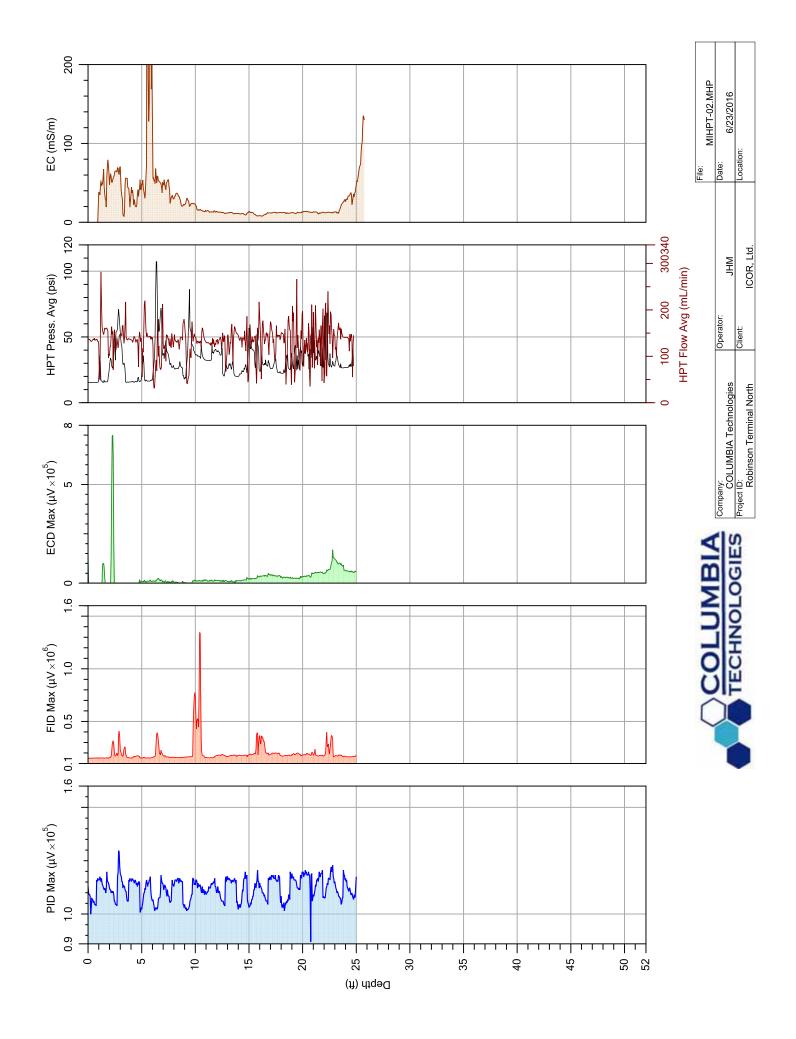
HPT System Performance Test

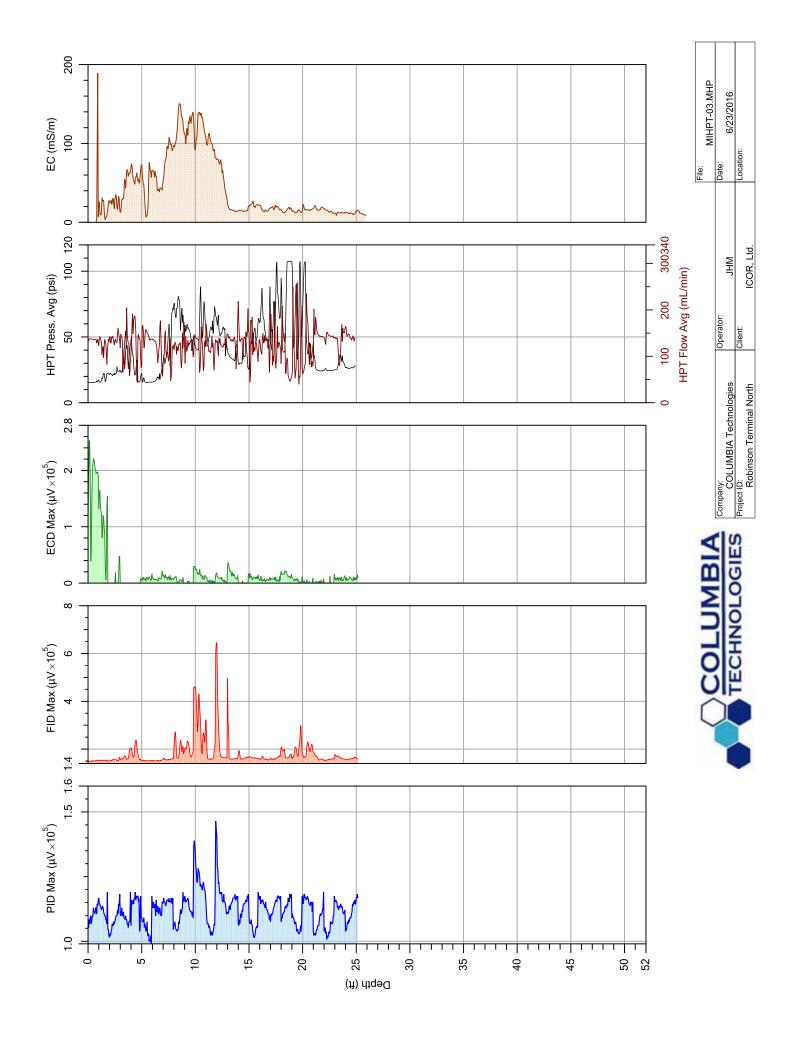
The EC Wenner is also evaluated using a Wenner Array test jig, to test the probe for isolation and continuity. Results must fall within 10% of the expected values; otherwise corrective action must be performed.

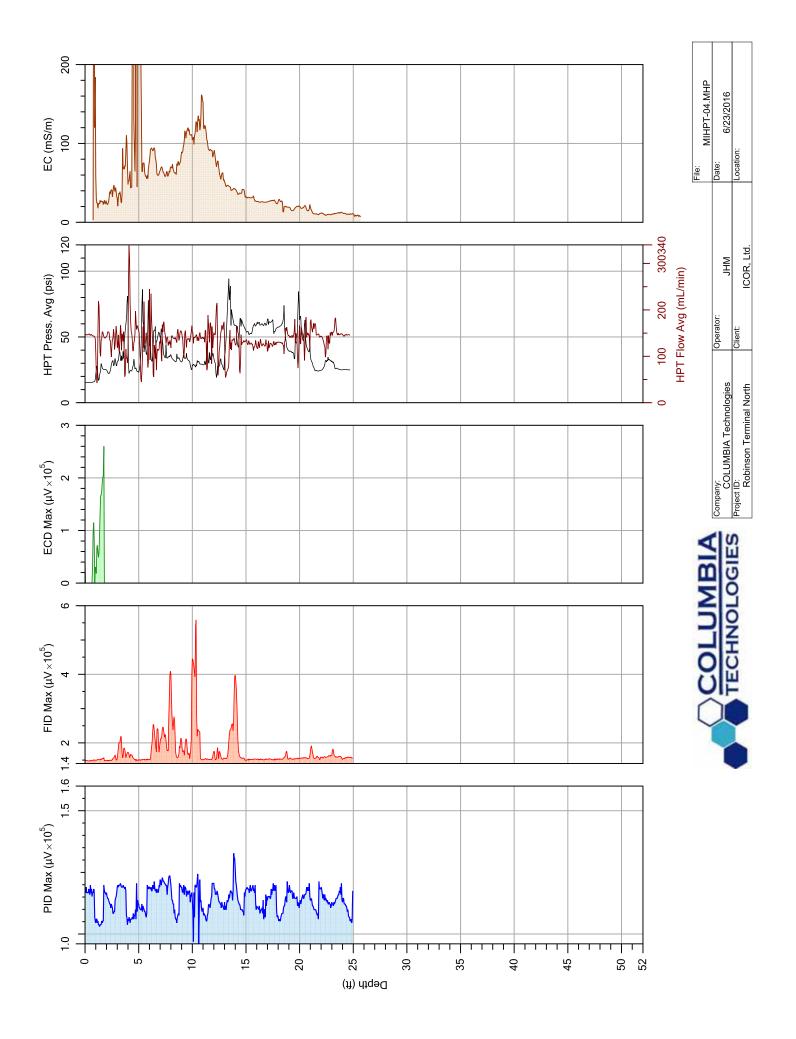
The HPT sensor is also evaluated using static (no flow) and dynamic (with flow at approximately 150 milliliters per minute hydraulic pressure measurements at two different head elevations, 6.0 inches apart. The difference for each test must be 0.2 psi, +/- 10%; otherwise corrective action must be performed.

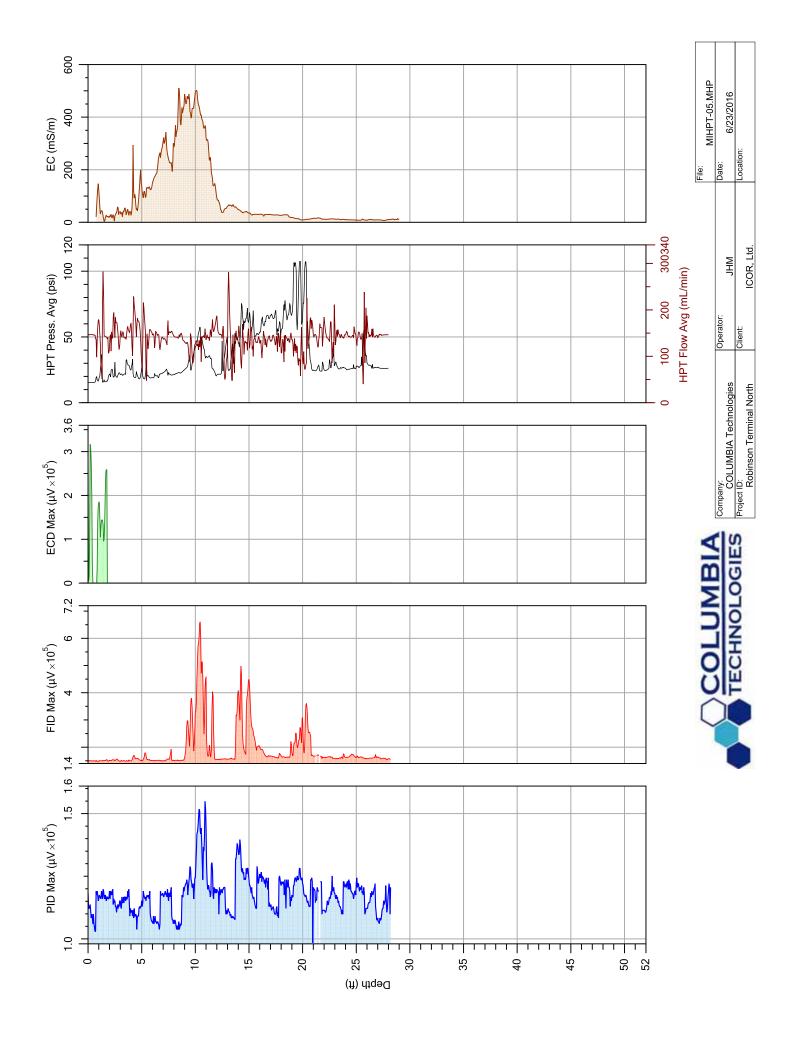
APPENDIX D – Data Logs for Membrane Interface Probe with Hydraulic Profile Tool (MiHpt), Individual Scale

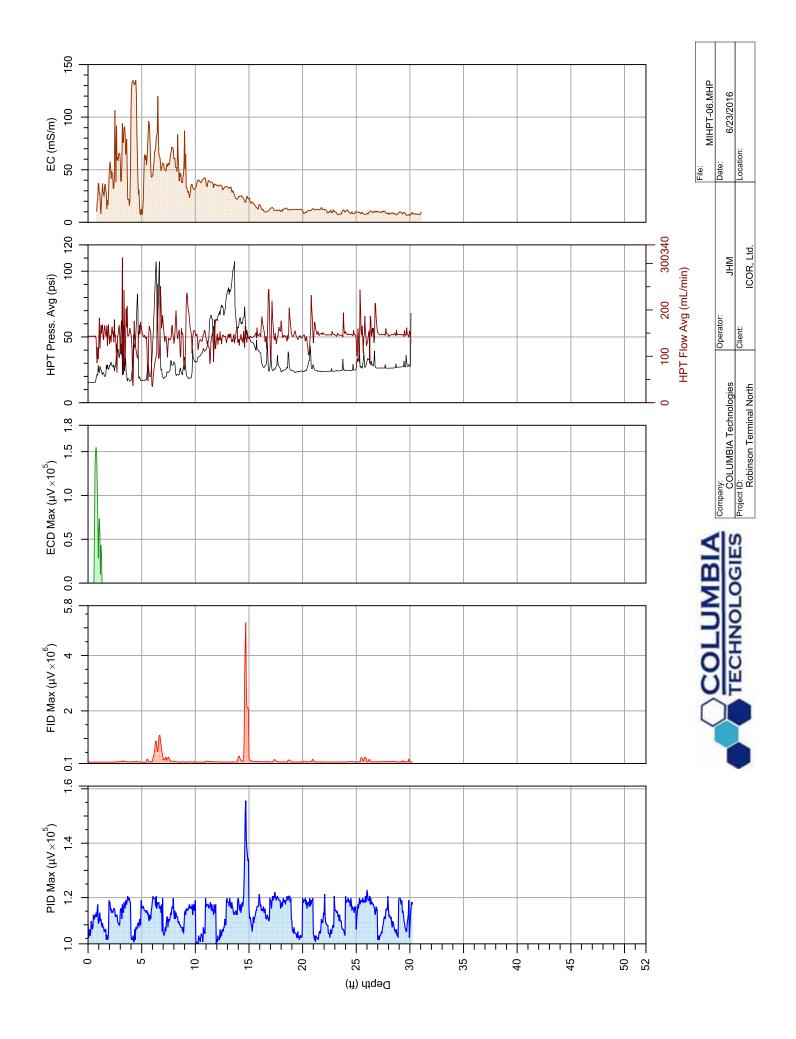


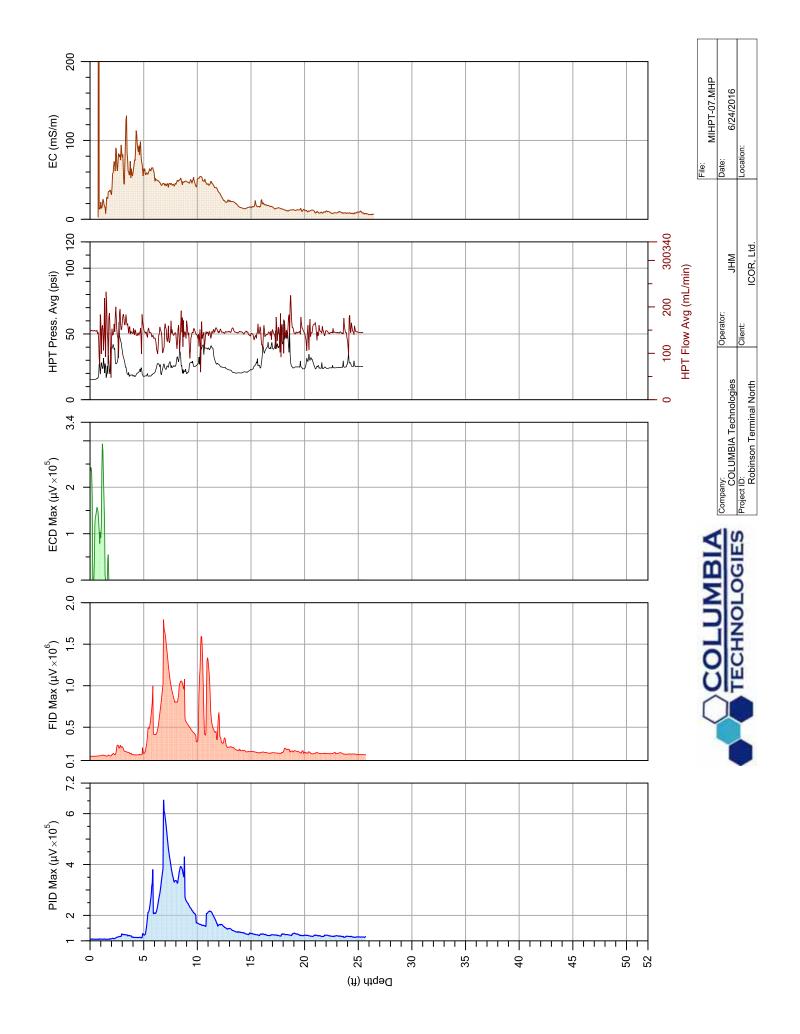


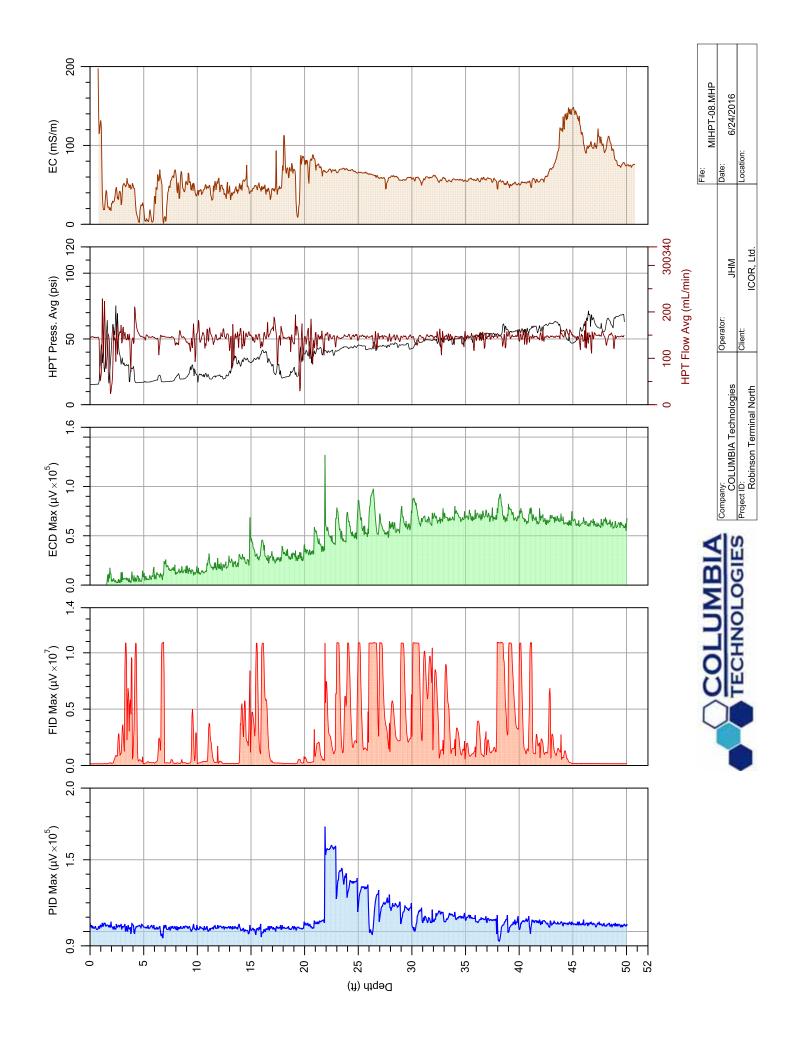


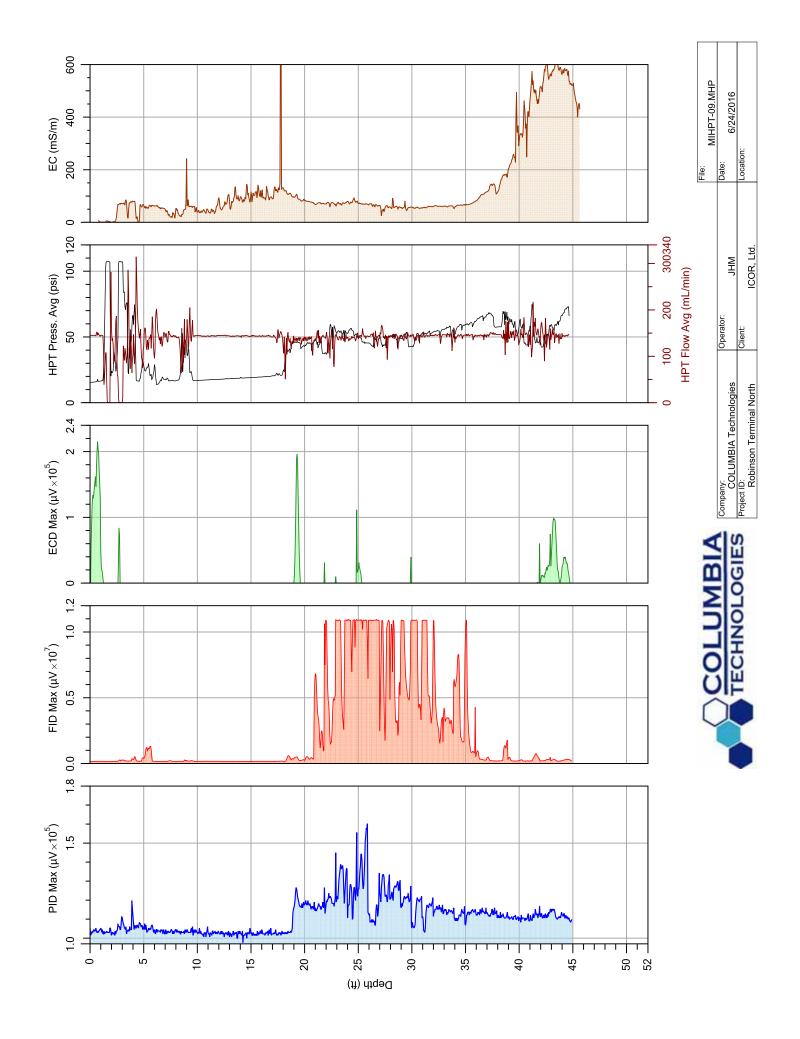


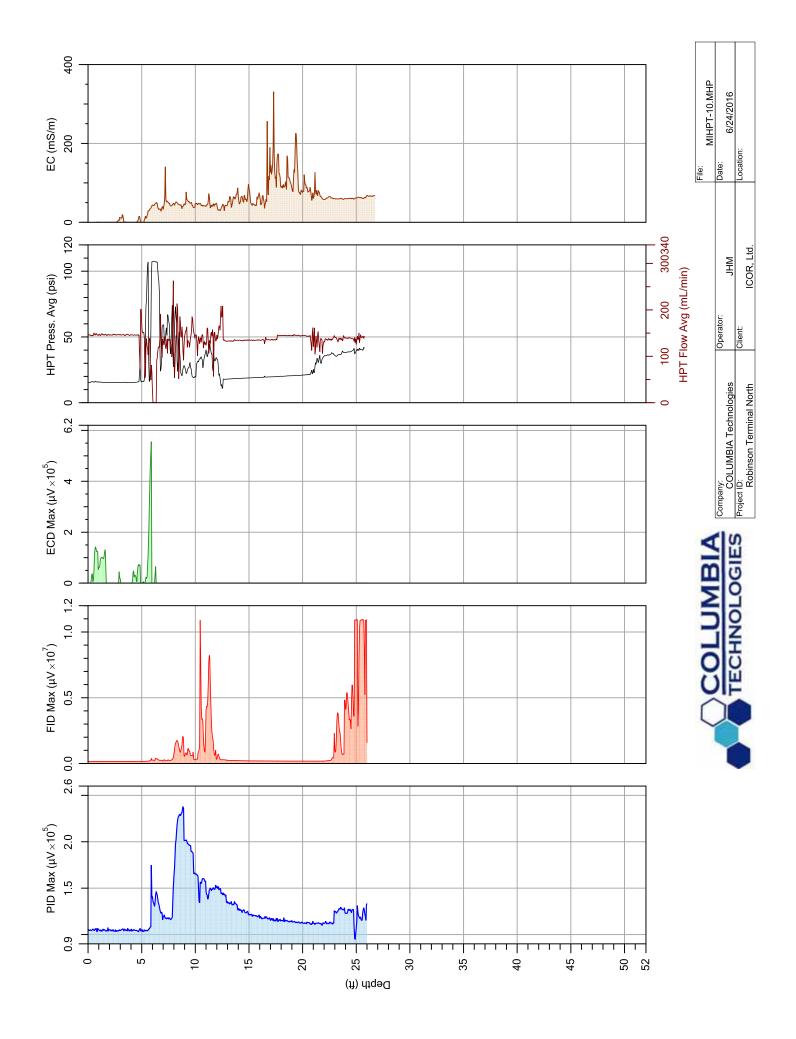


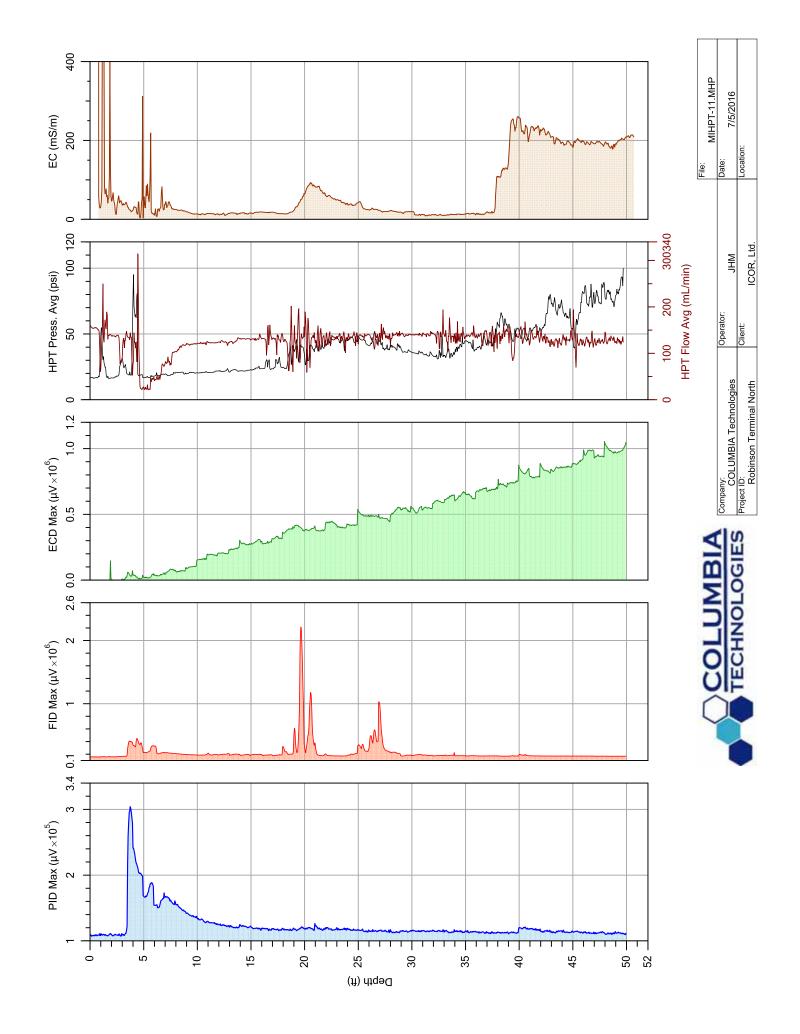


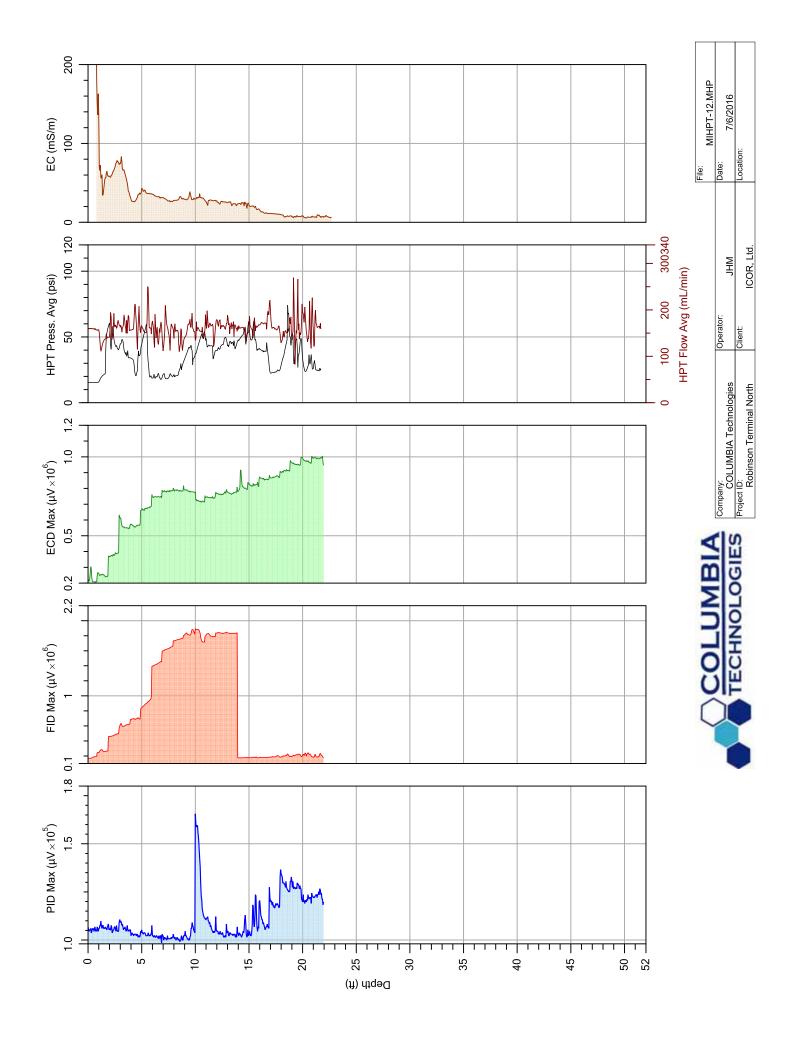


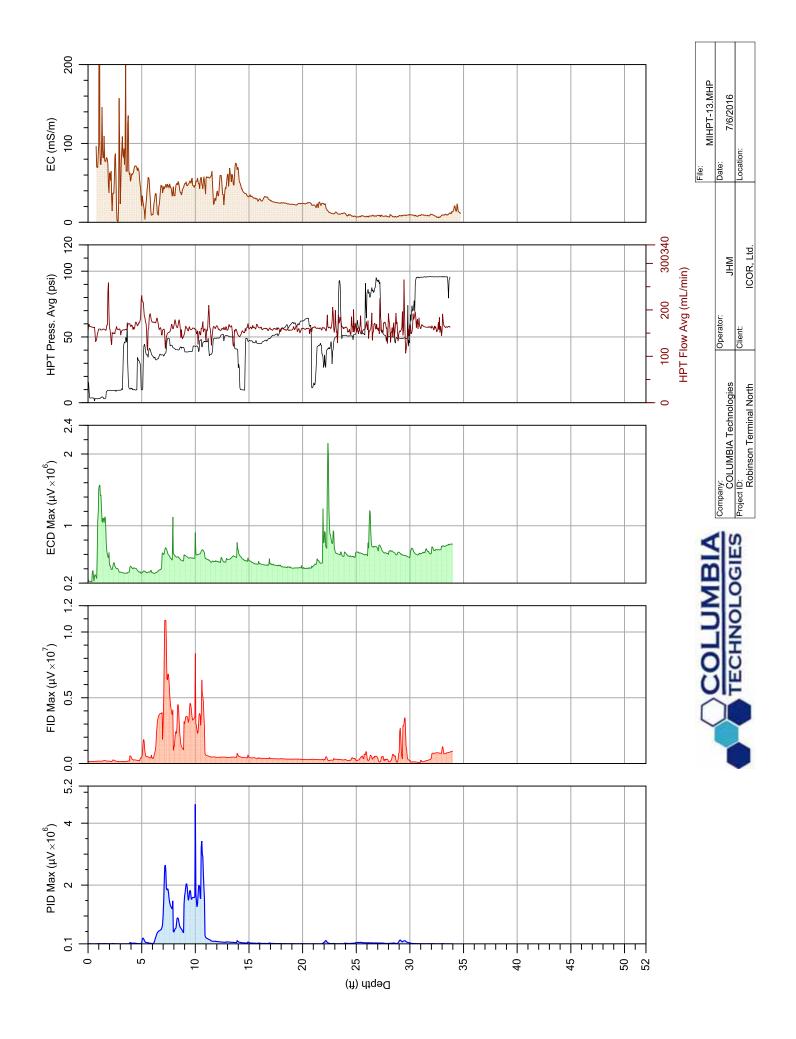


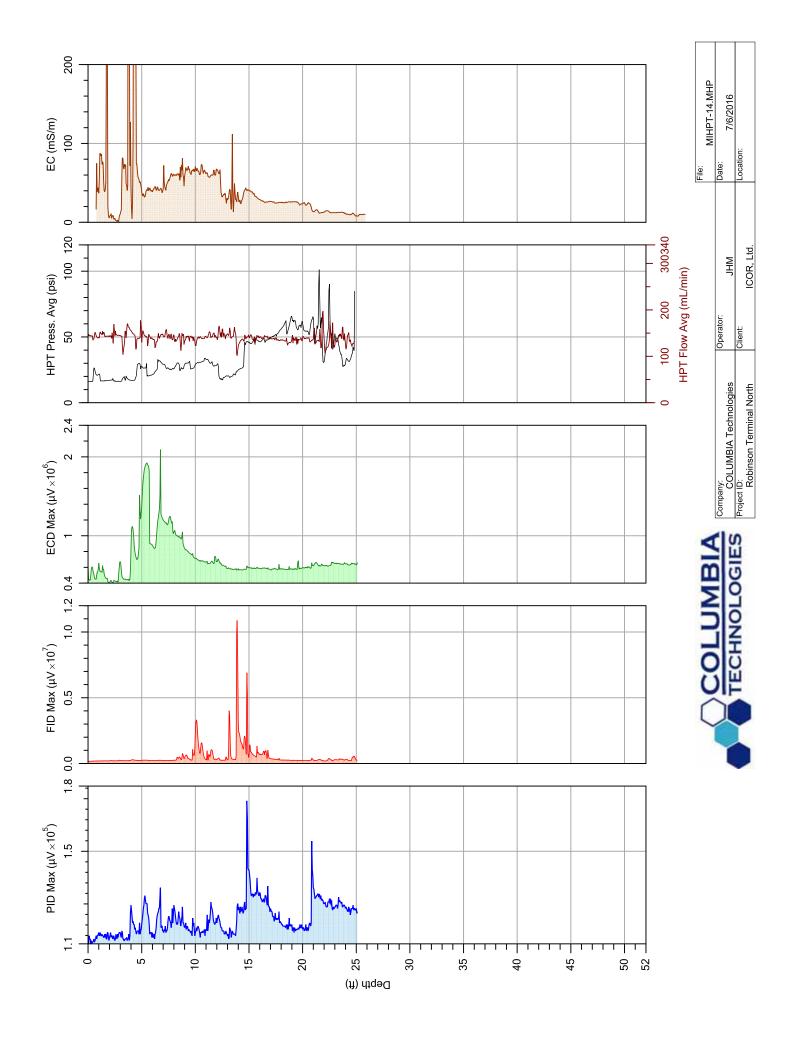


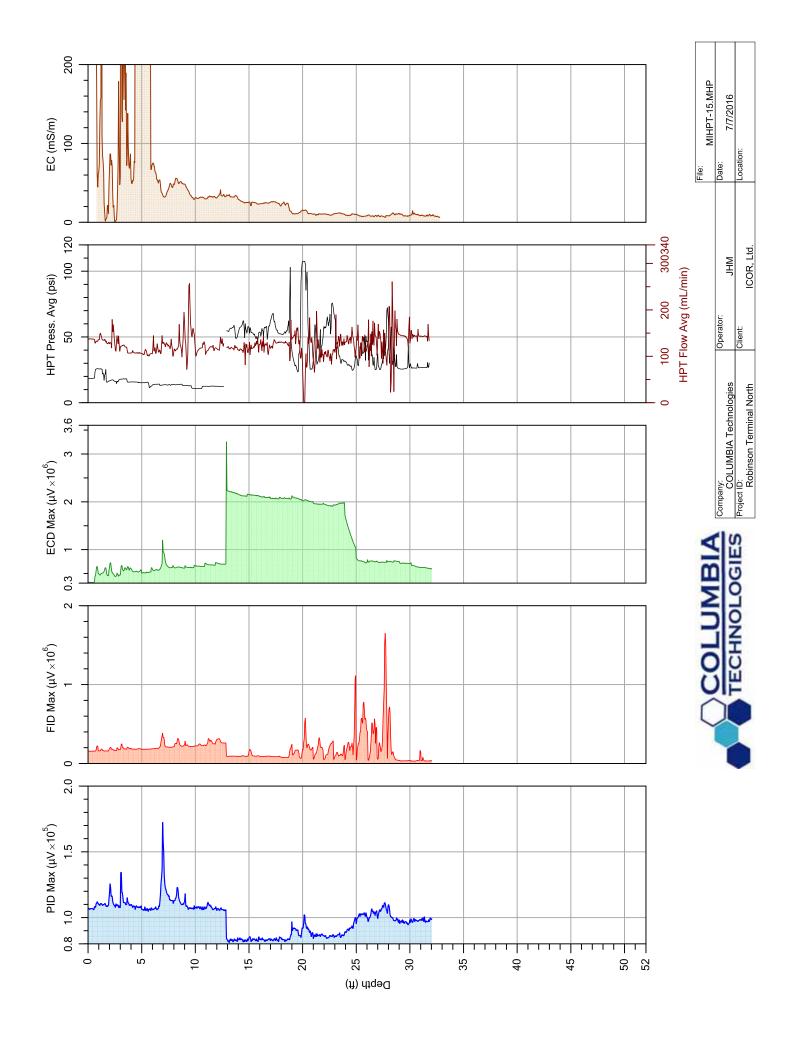


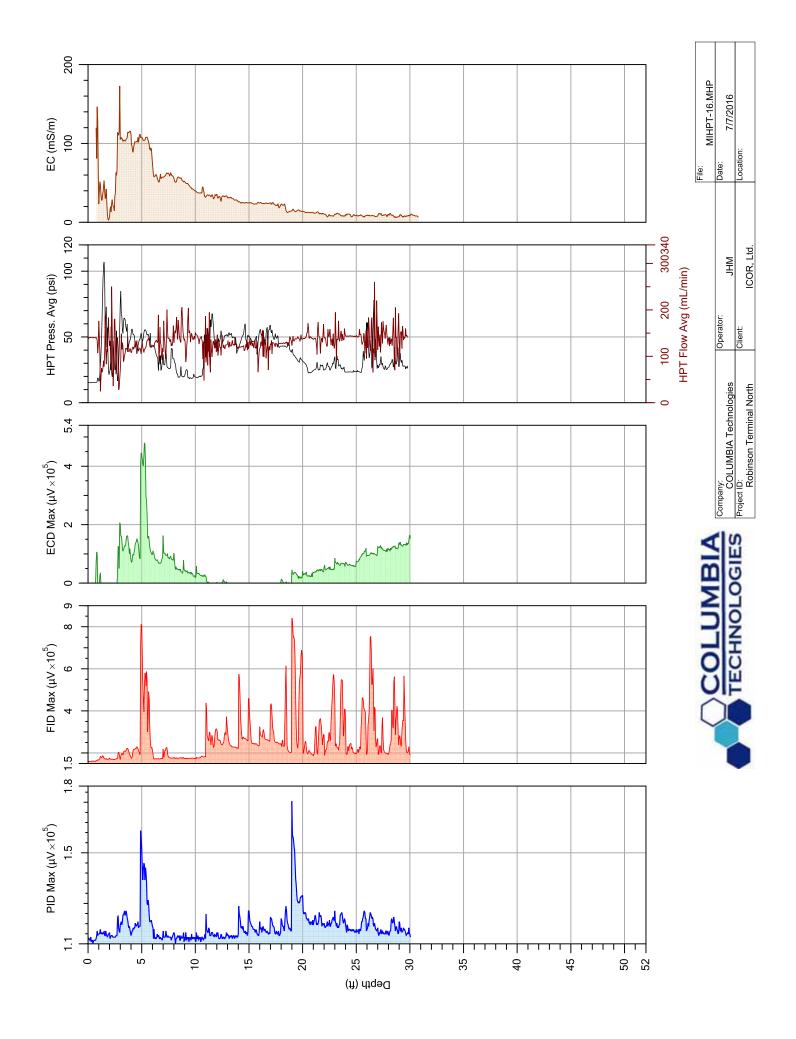


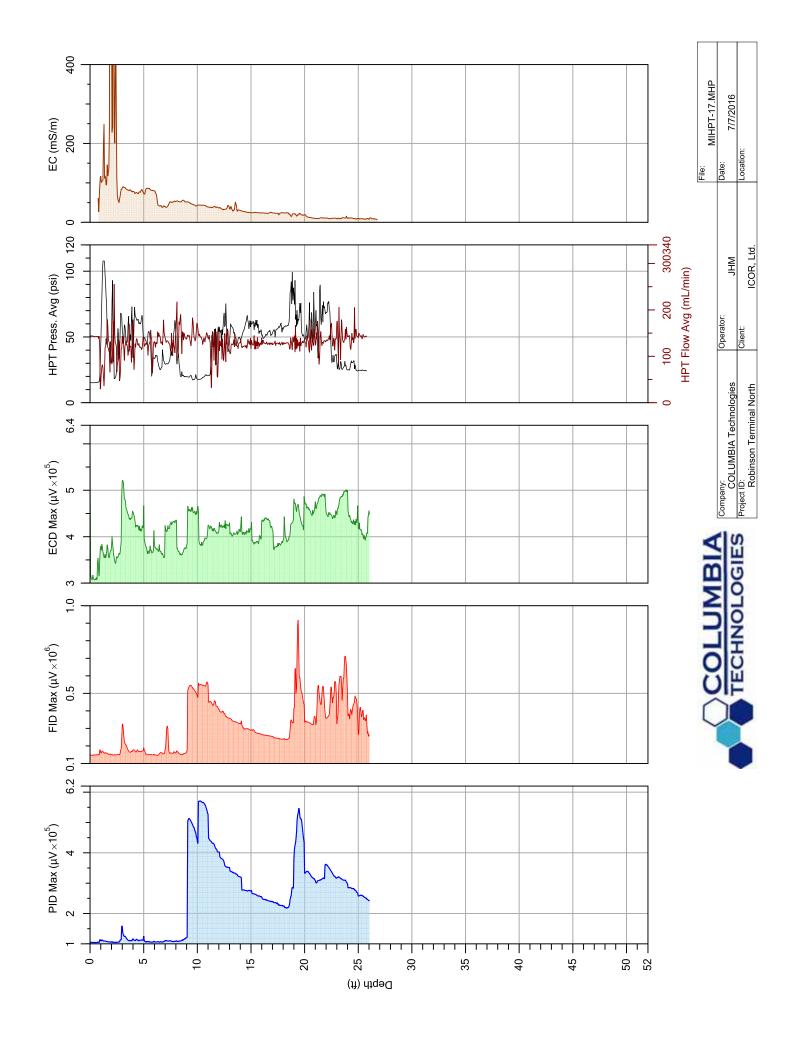


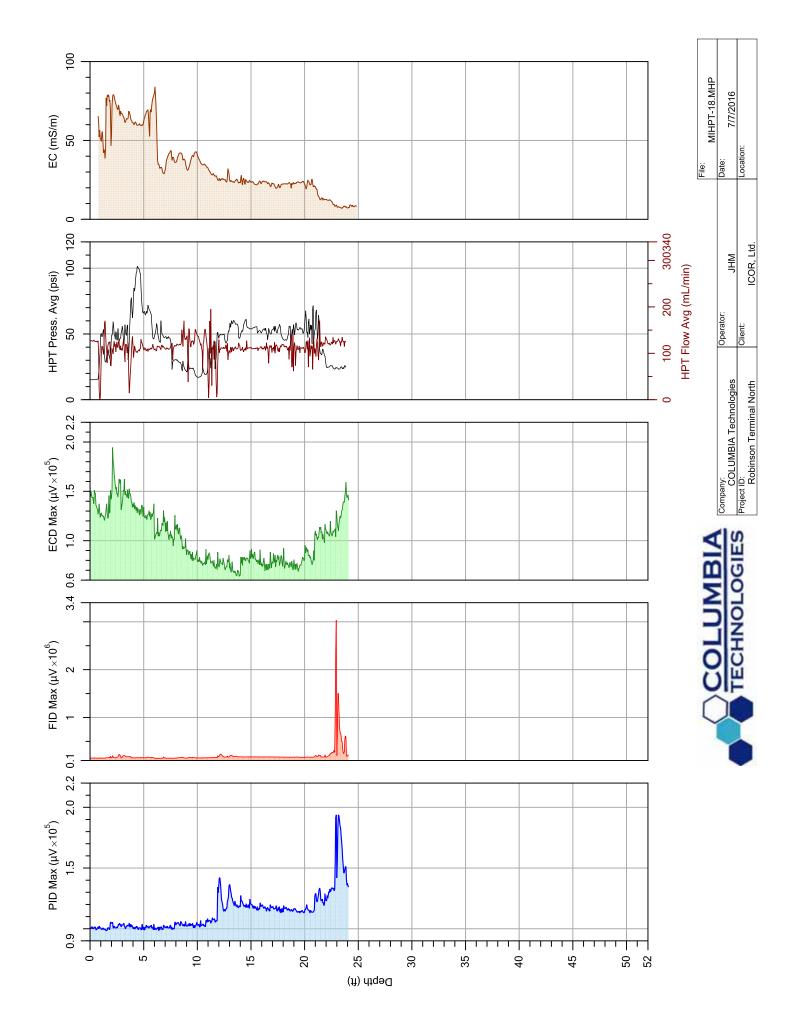


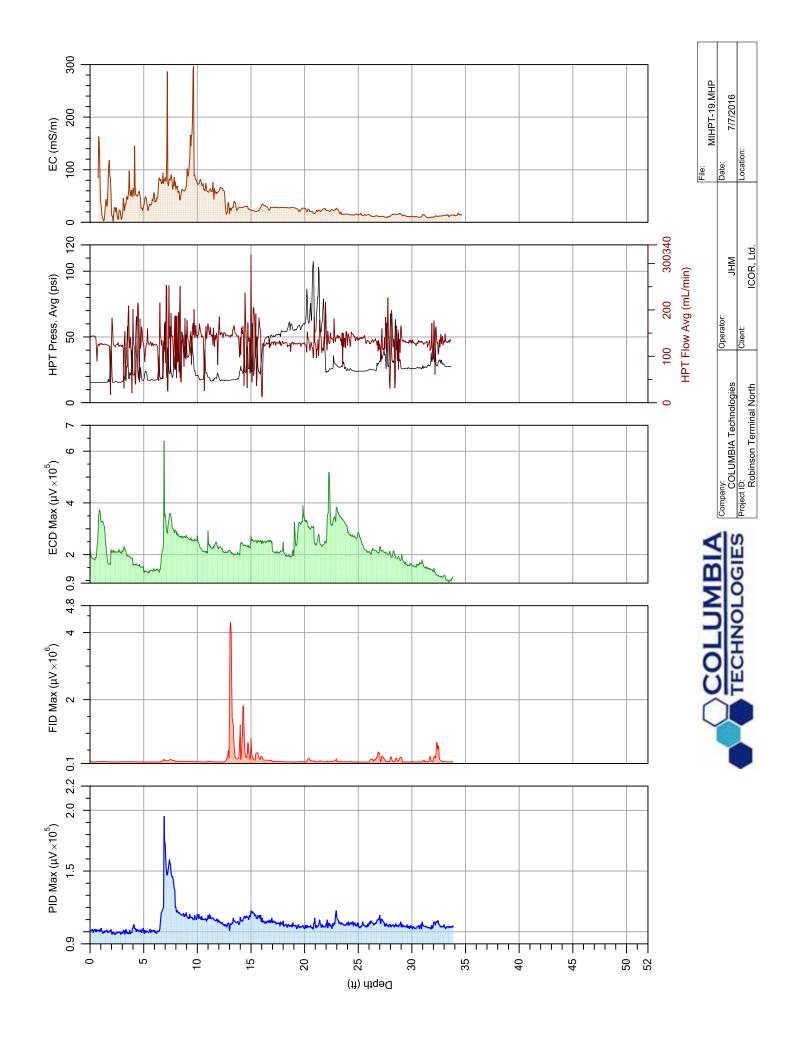


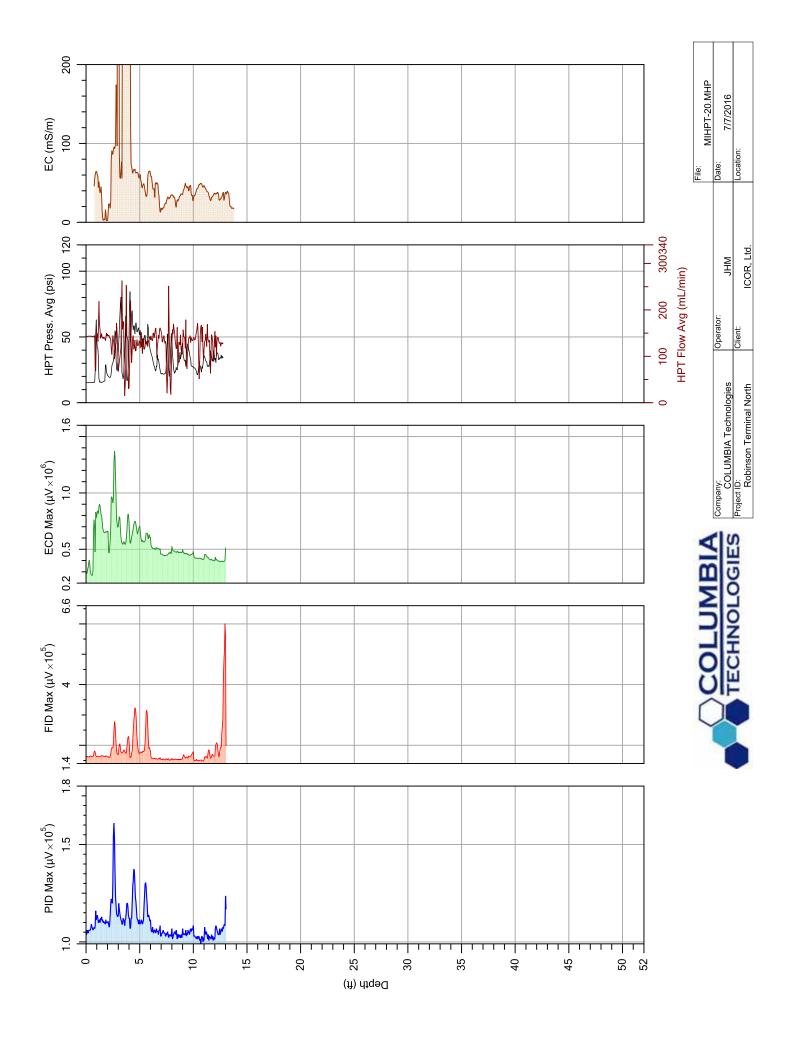


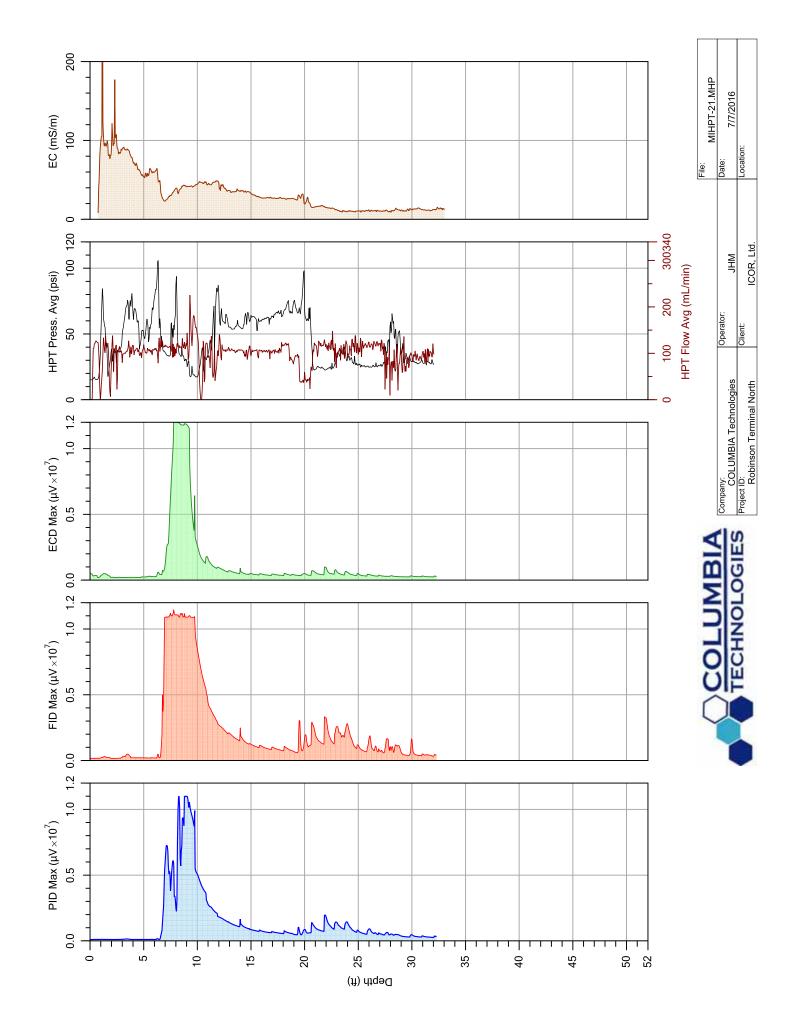


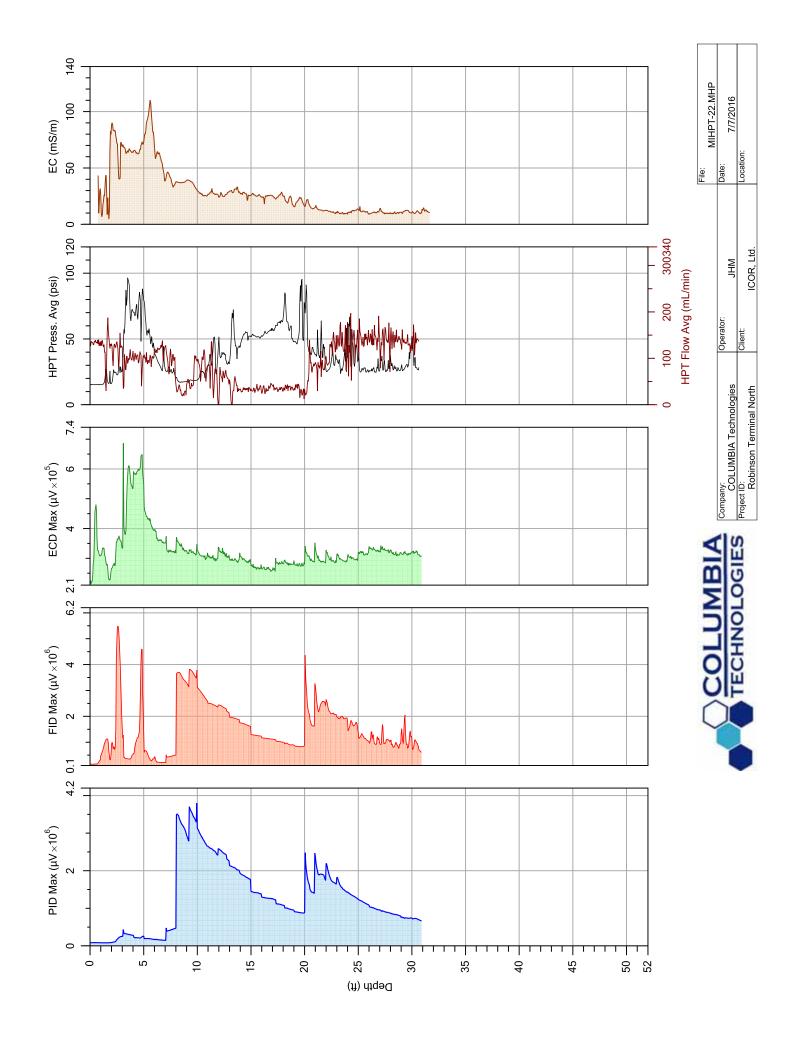




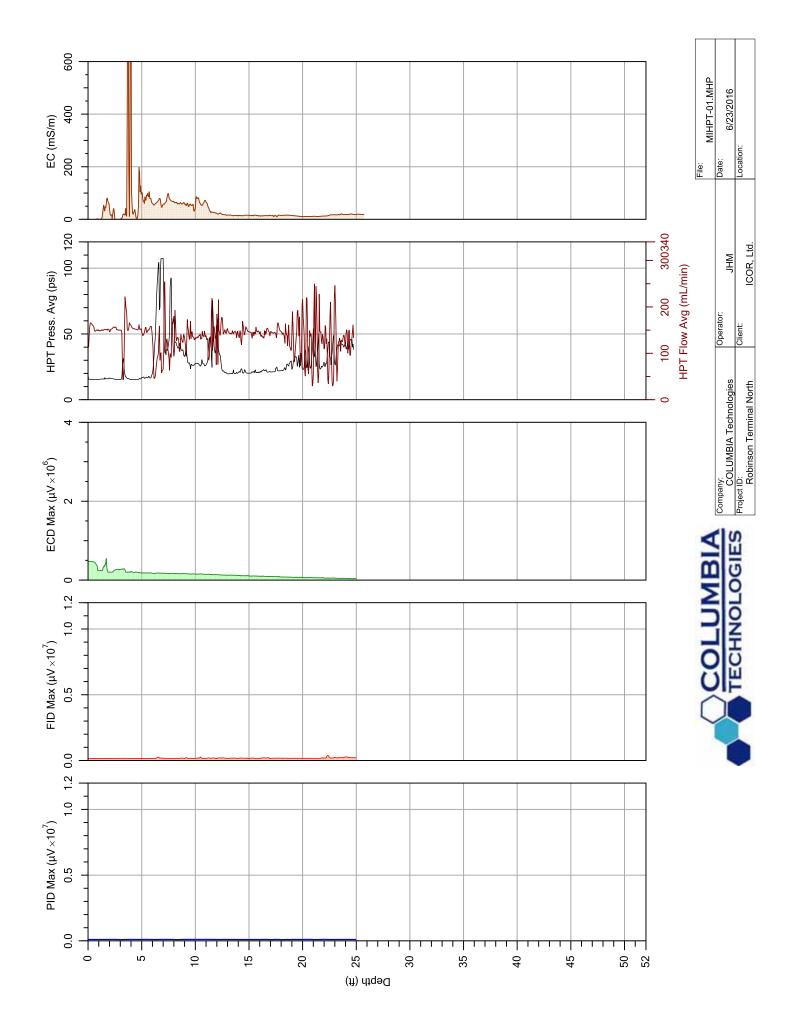


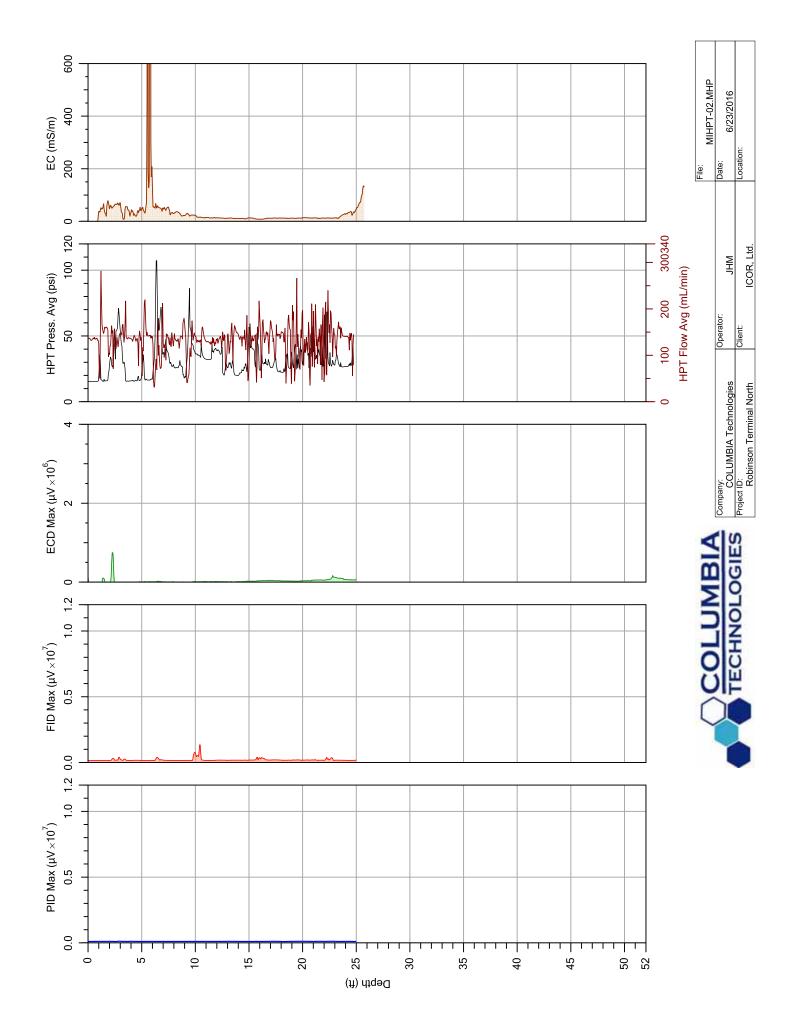


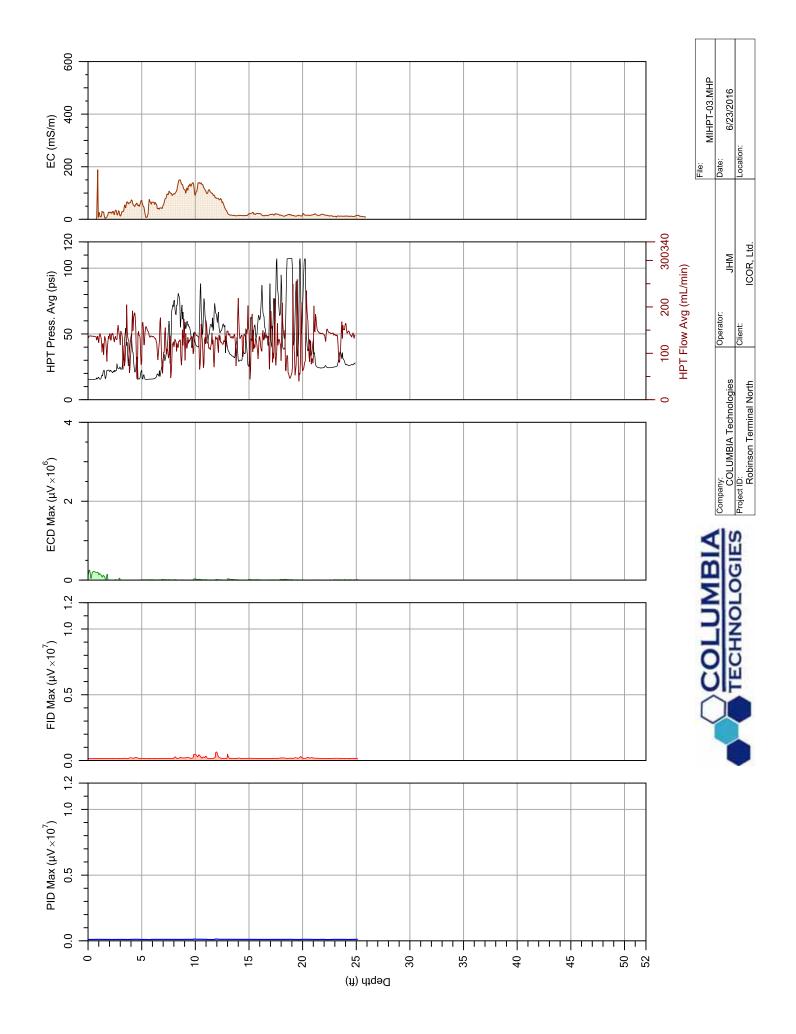


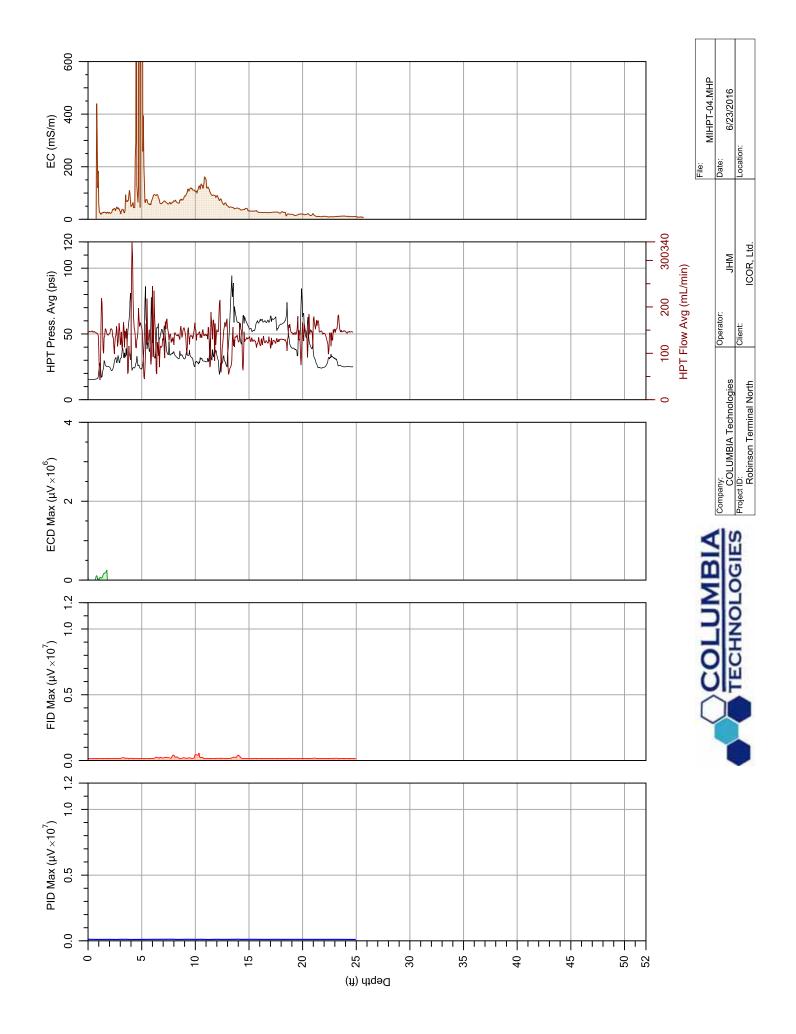


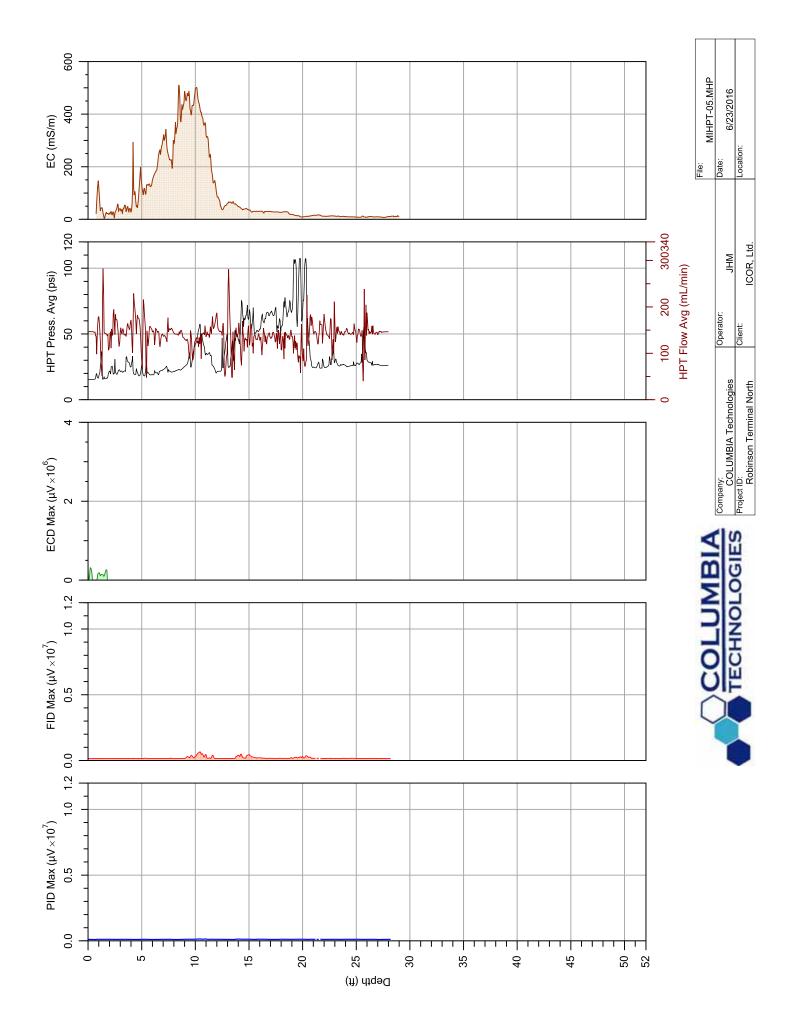
APPENDIX E – Data Logs for Membrane Interface Probe with Hydraulic Profile Tool (MiHpt), Collective Scale

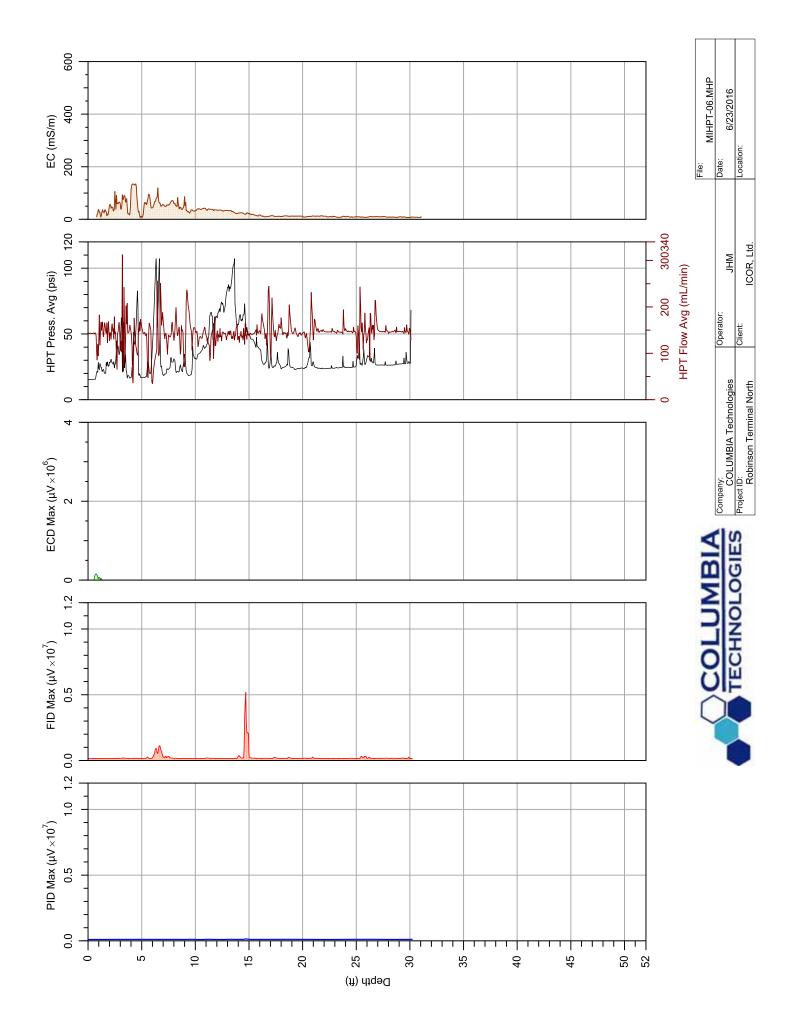


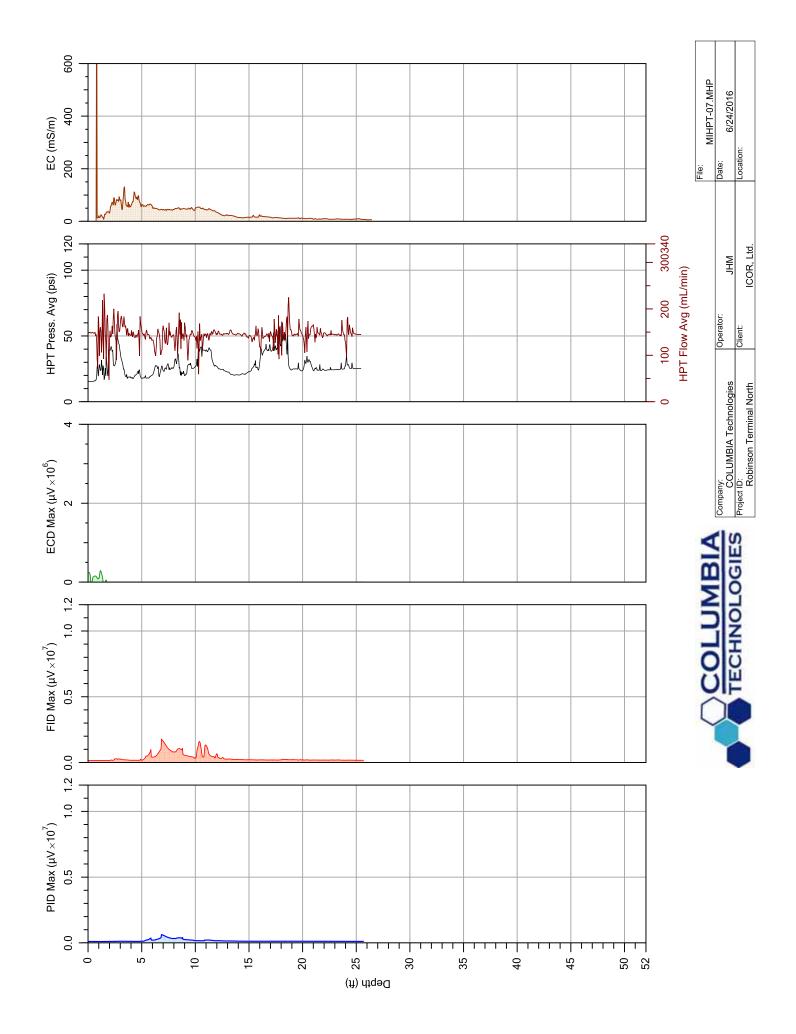


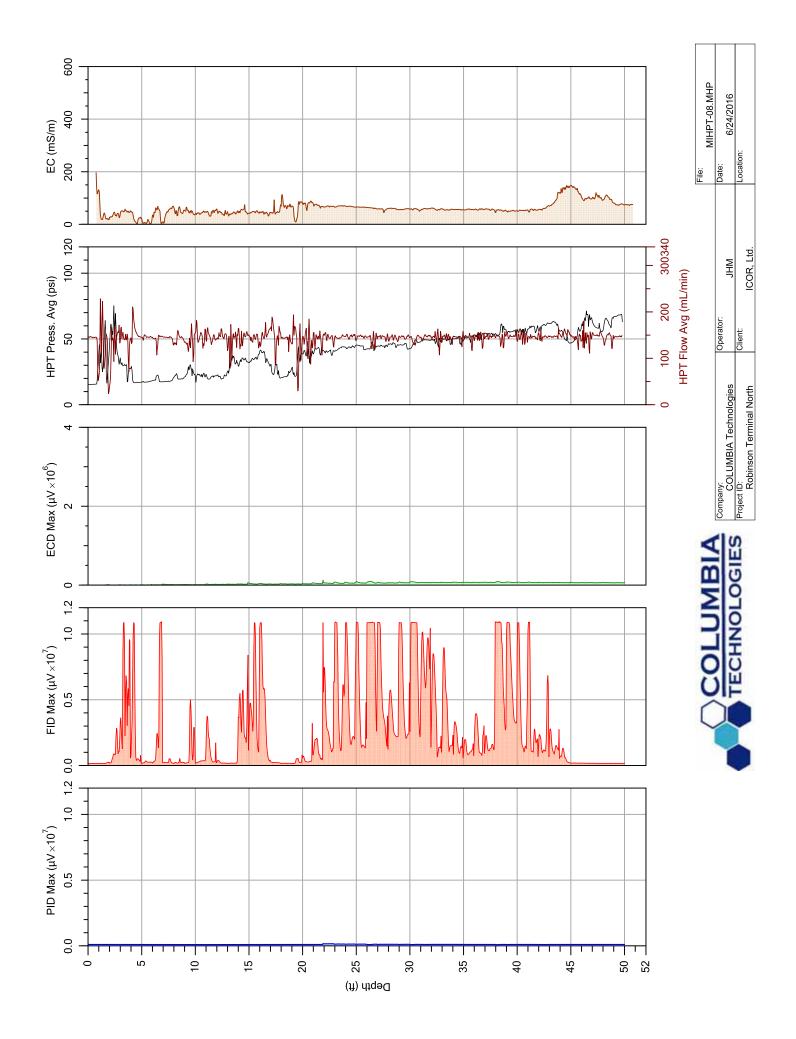


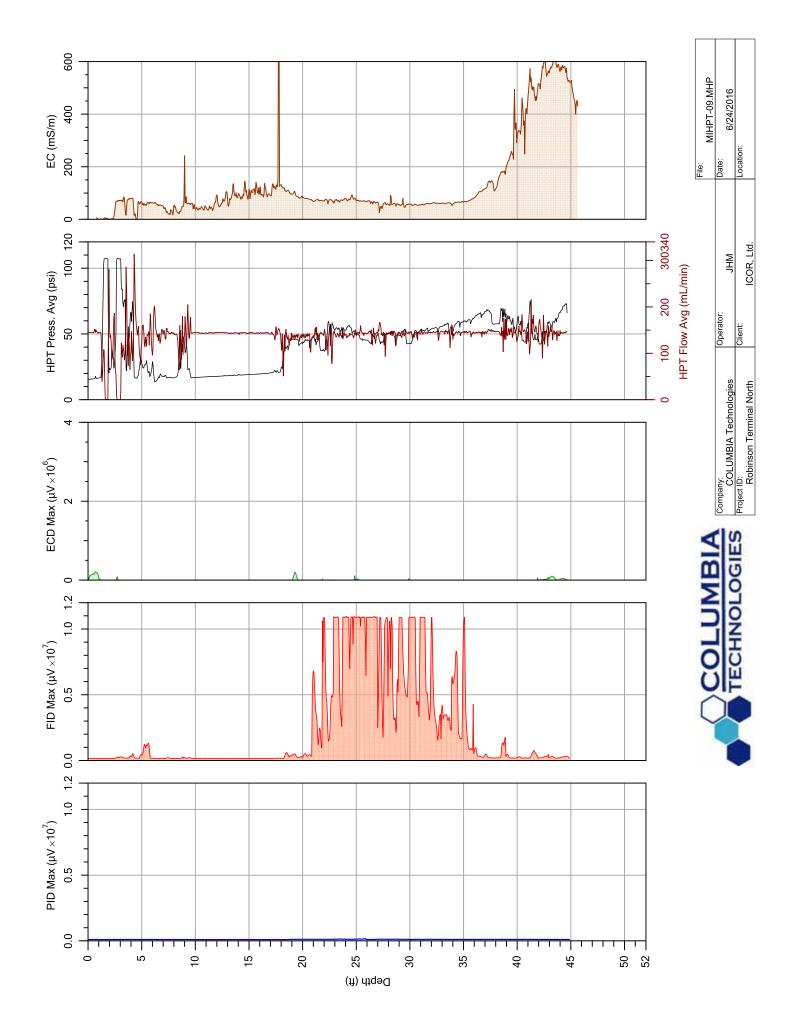


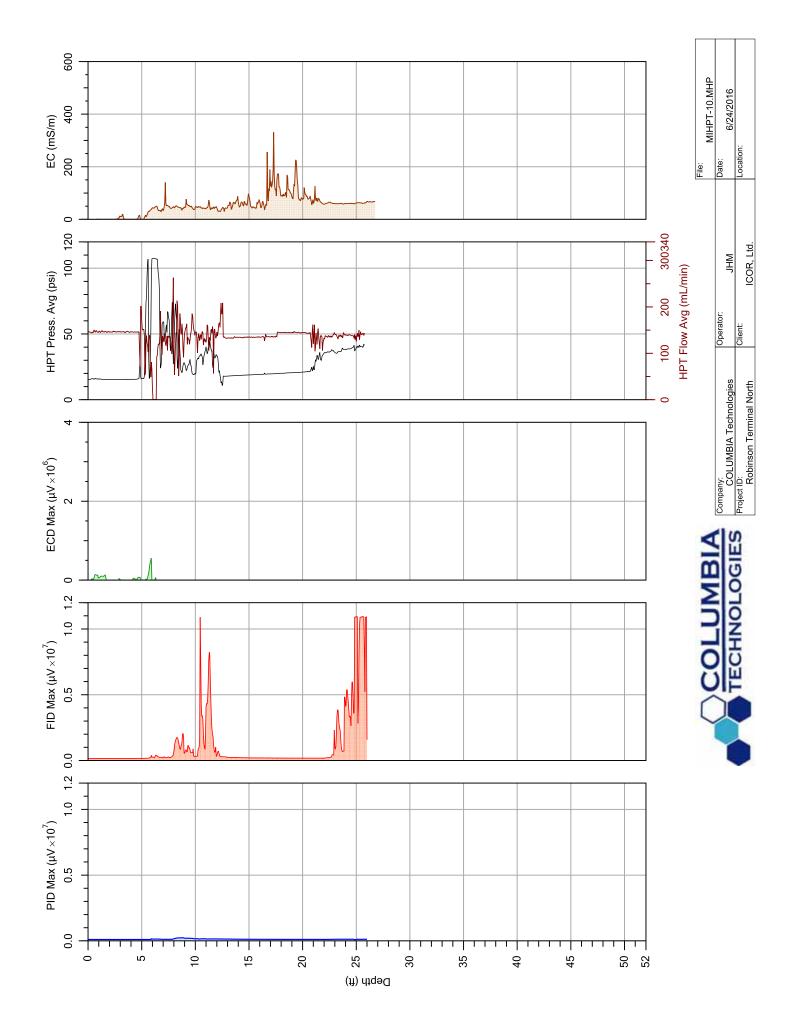


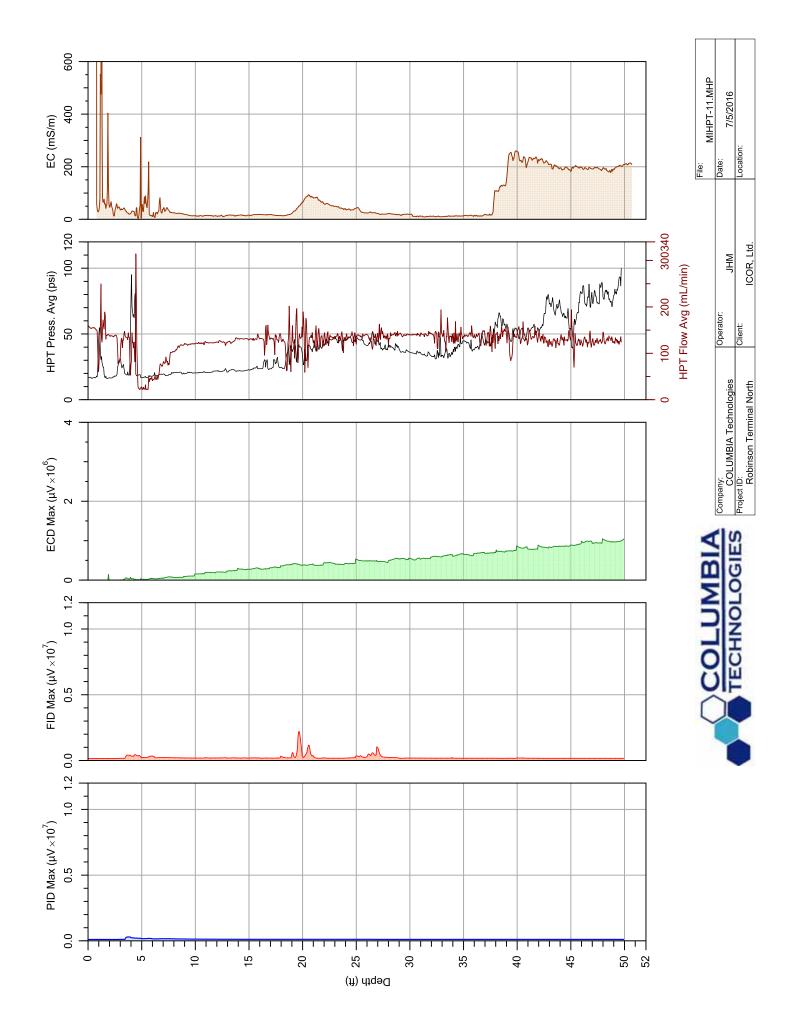


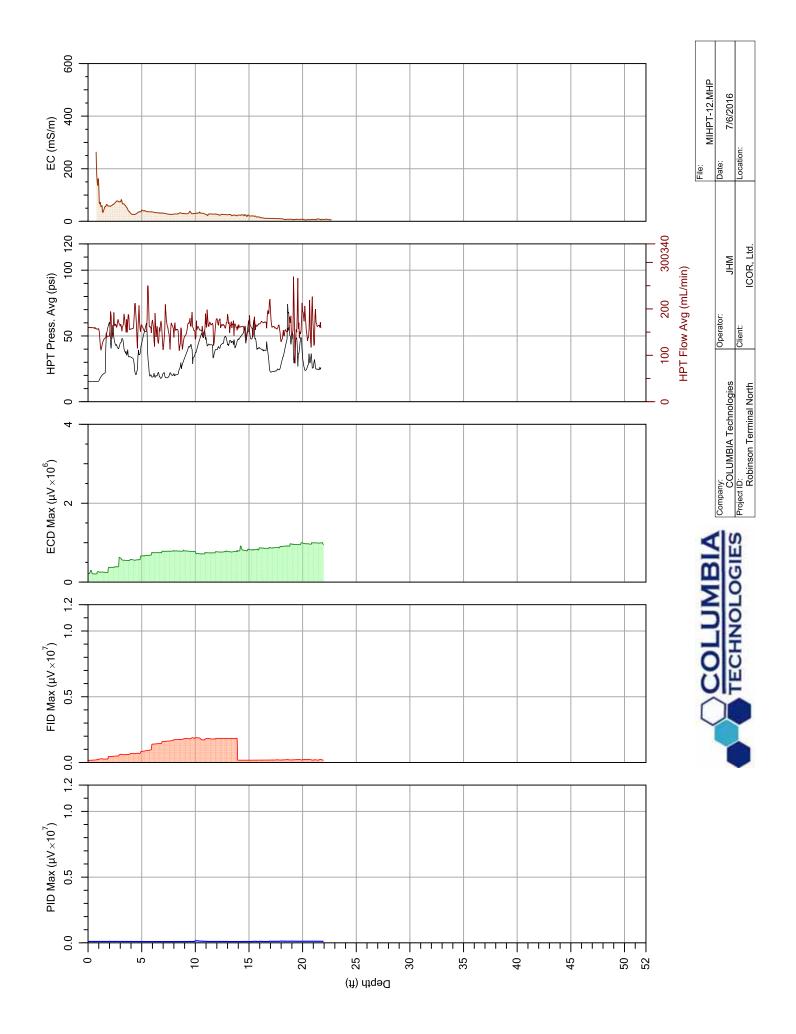


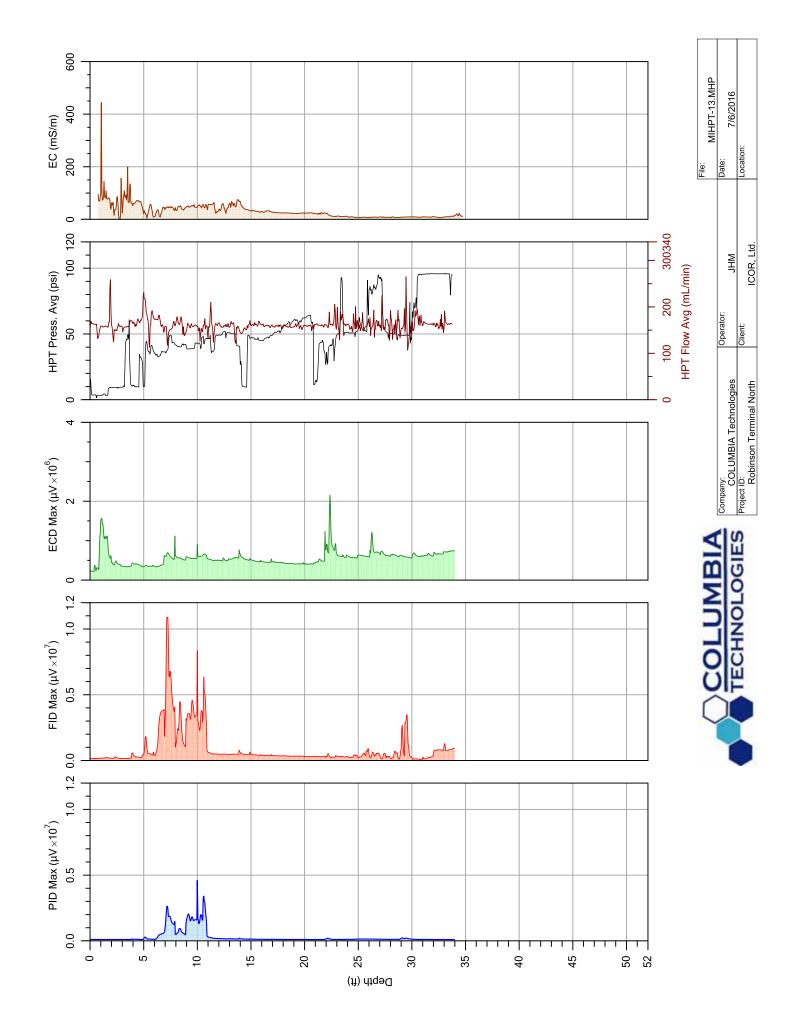


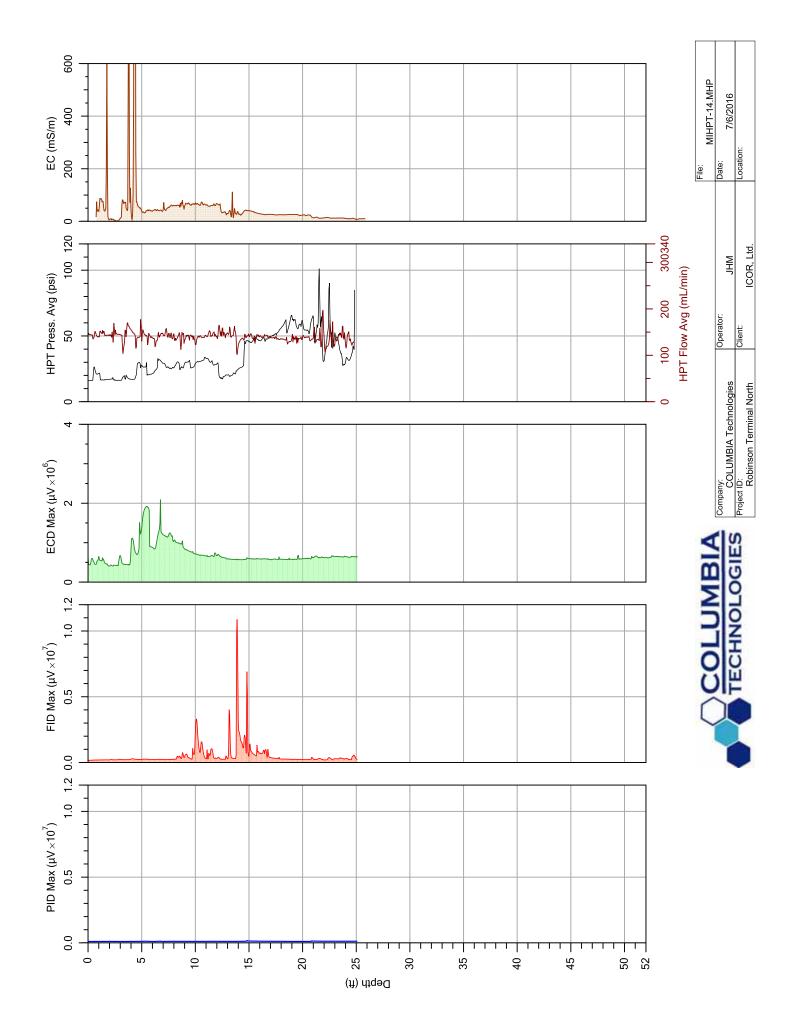


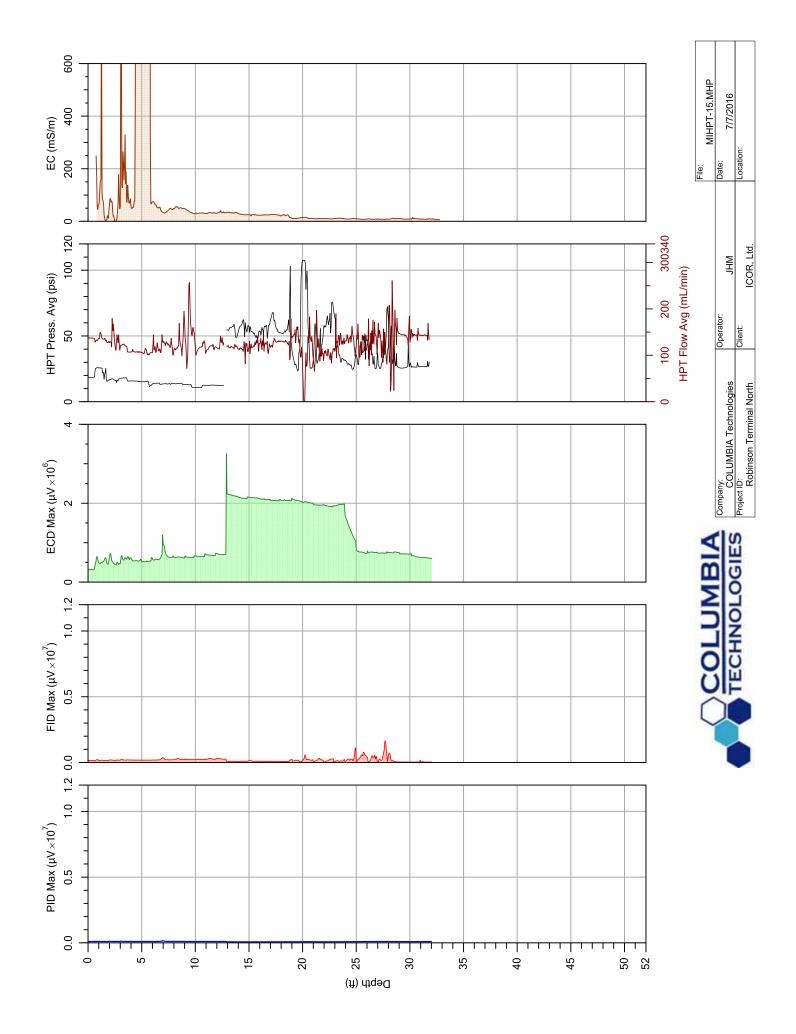


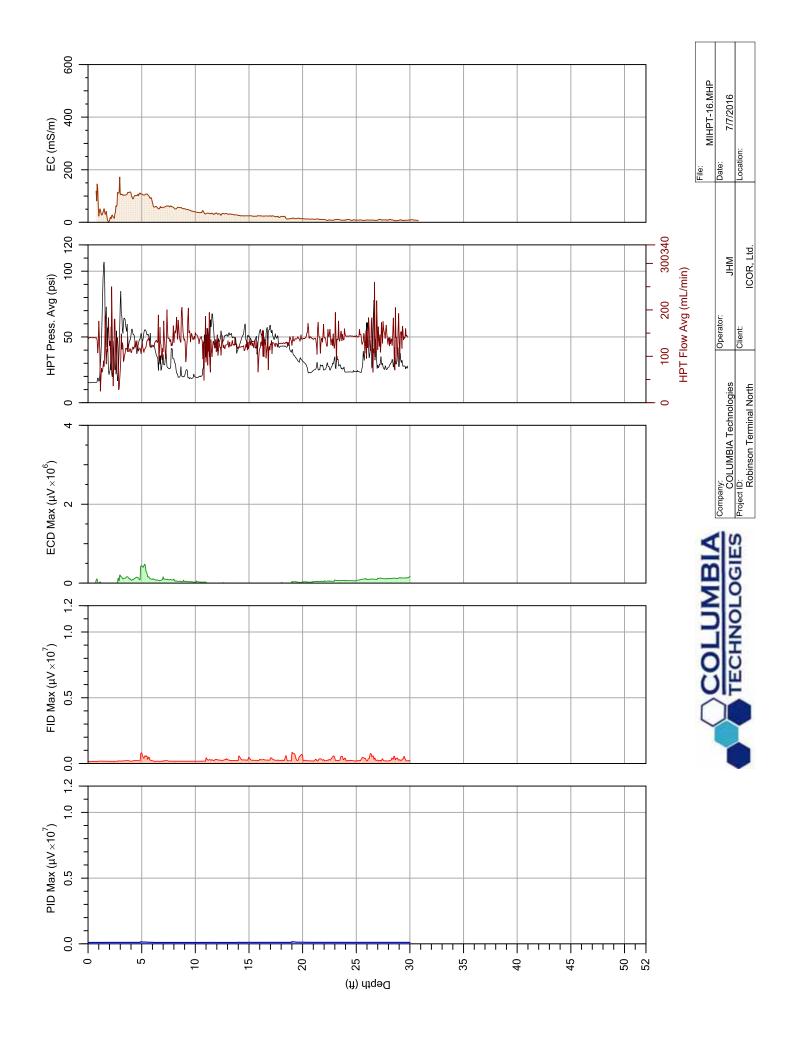


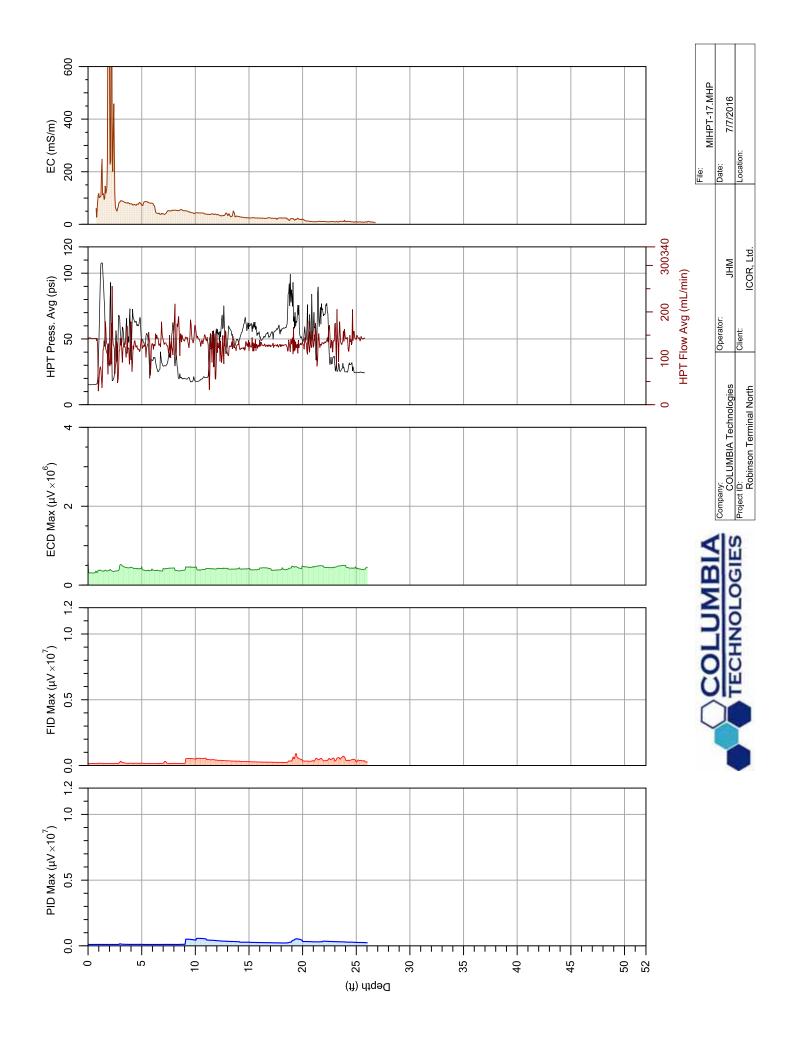


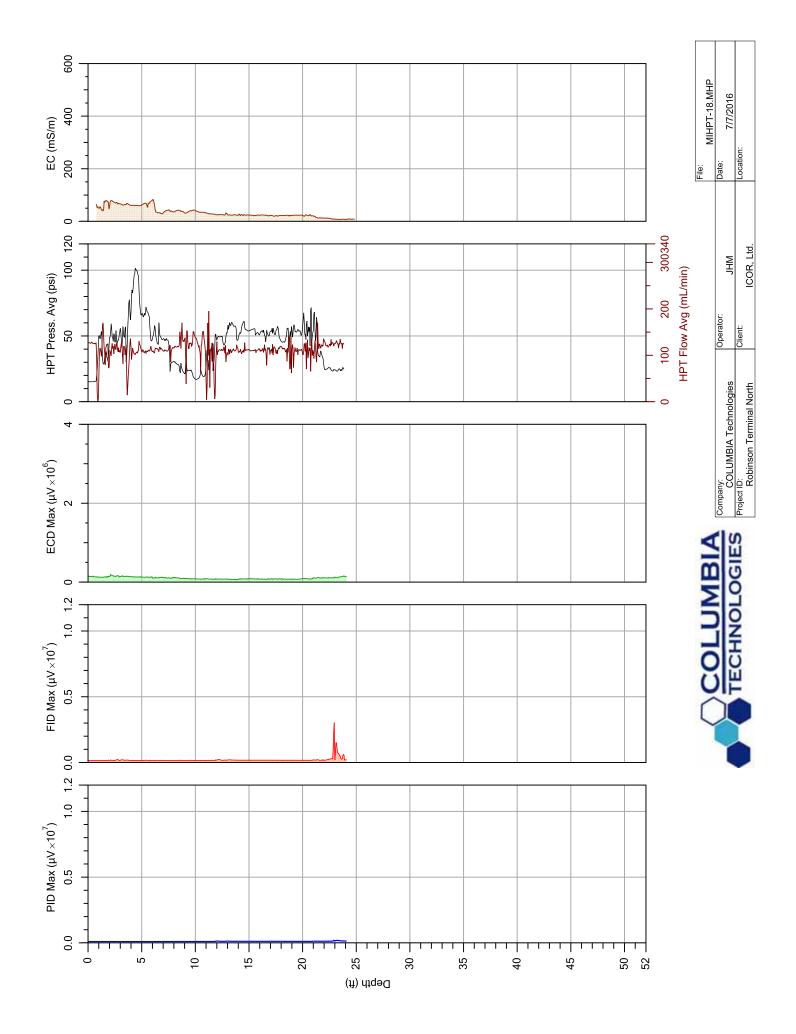


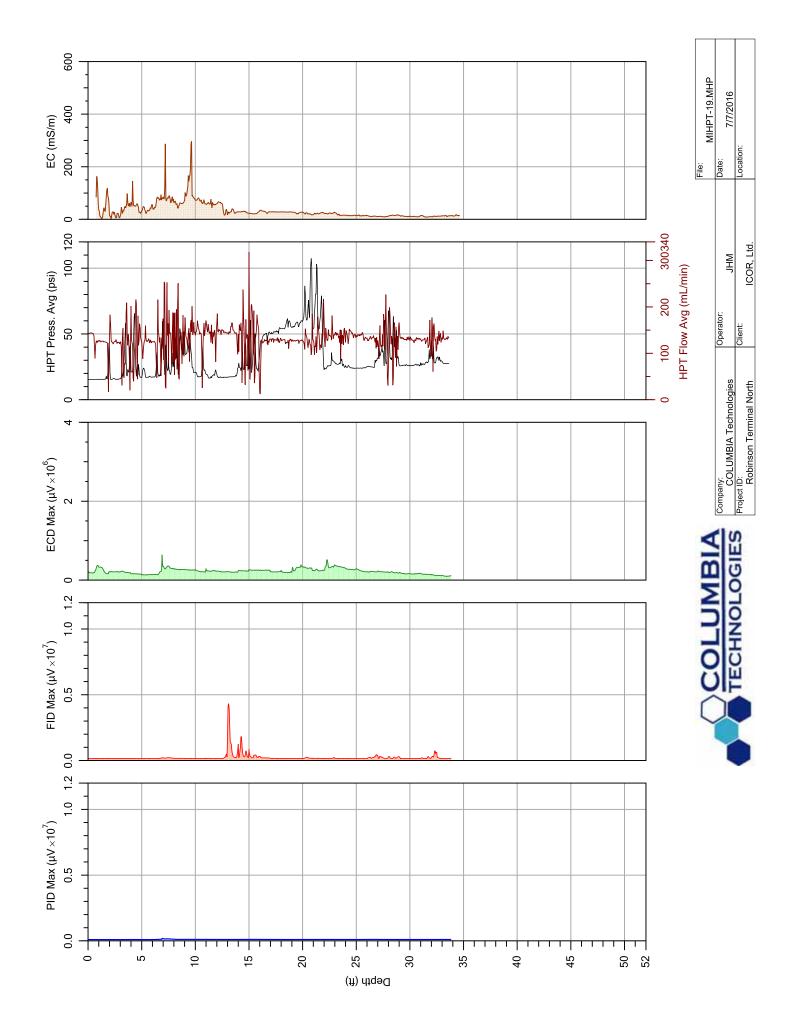


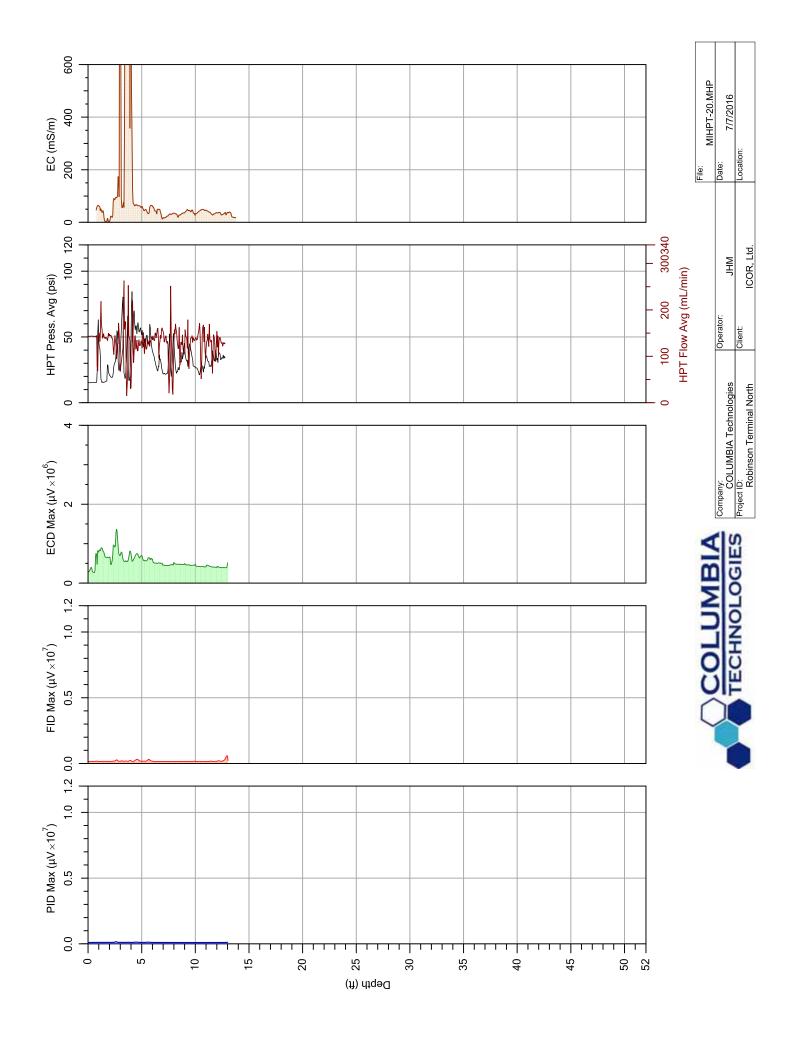


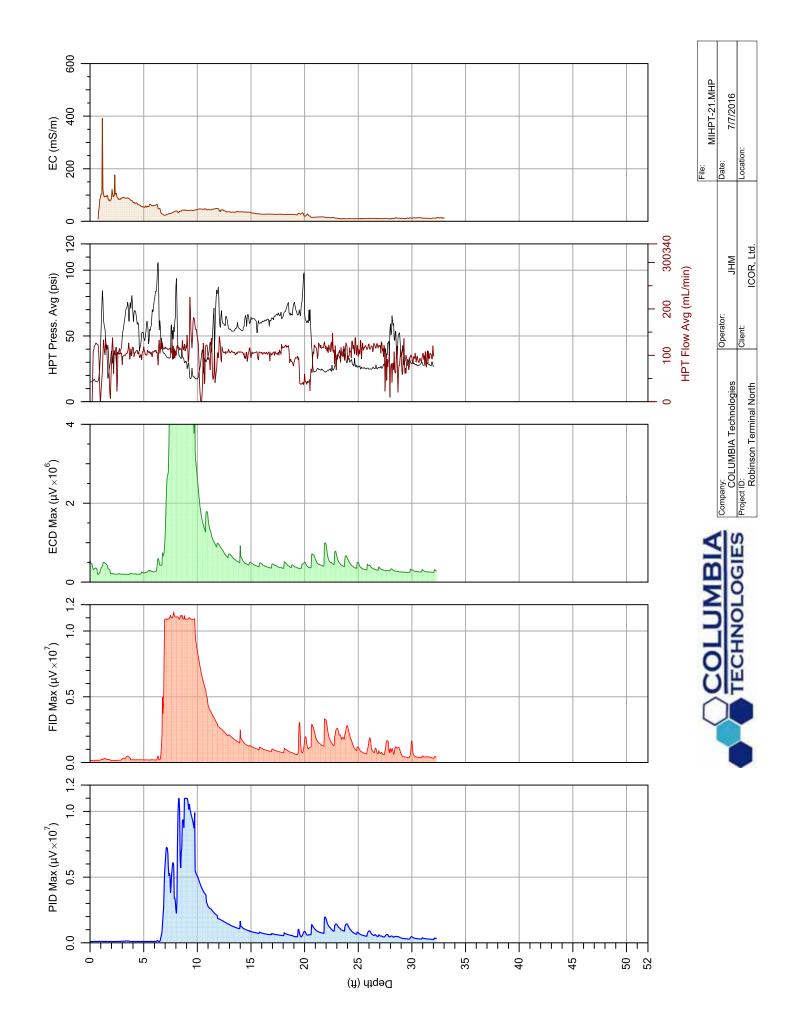


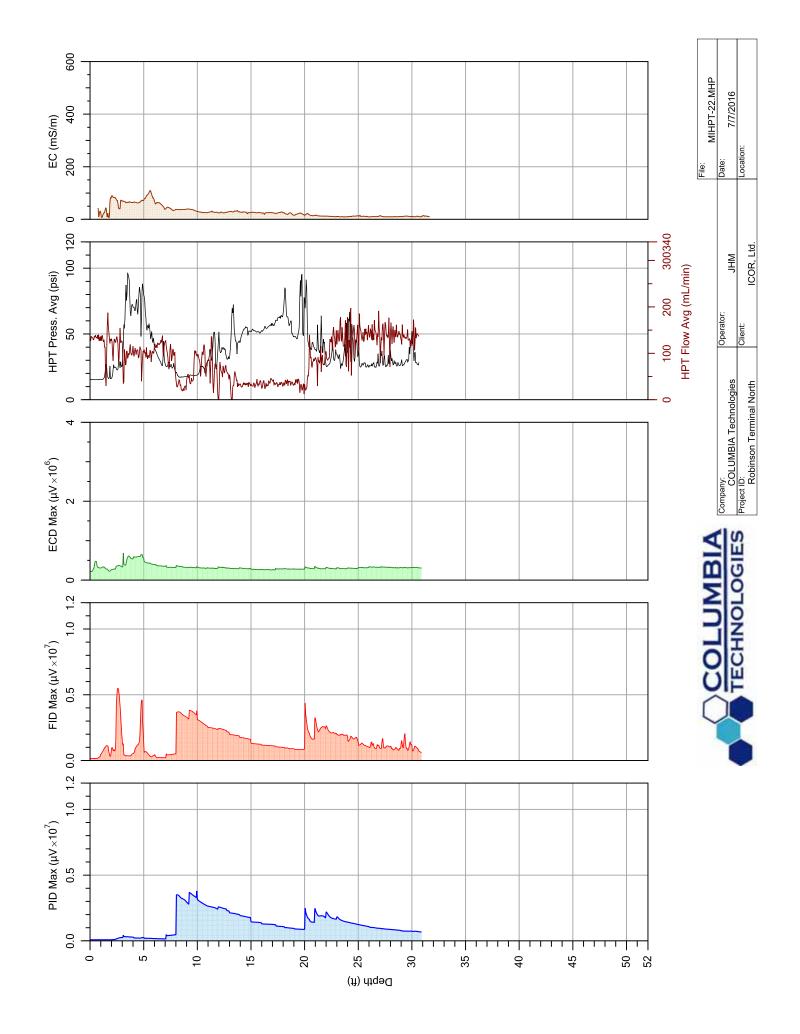












APPENDIX F – Current Laboratory Results

TABLE 4A. TEC SOIL ANALYTICAL RESULTS

FORMER ROBINSON TERMINAL NORTH 500 AND 501 NORTH UNION STREET ALEXANDRIA, VA

Sample ID:	Units	VDEQ-	VDEQ-	VDEQ-	TEC-B1	TEC-B2	TEC-B3	TEC-B4	TEC-B6	TEC-B7	TEC-B8	TEC-B9	TEC-B10 TEC-B11 TEC-B12 TEC-B13	TEC-B11	TEC-B12	TEC-B13
		PSSS	T2SCU	T3SCR	(11-12)	(12-16)	(11-12)	(9-10)	(11-12)	(10-12)	(2-8)	(12-14)	(12-14)	(9-11)	(7-8)	(11-12)
Date:					4/26/06	4/26/06	4/26/06	4/26/06	4/26/06	4/26/06	4/26/06	4/26/06	4/26/06	4/26/06	4/26/06	4/26/06
ТРН																
TPH-GRO	mg/kg	8300	NE	JN	ND	ΠN	ΔN	QN	ΠN	QN	ND	0.62	ΠN	ND	0.62	ND
TPH-DRO	mg/kg	11000	NE	NE	ND	QN	ND	ND	ND	ND	ND	17	ND	ND	17	19
NOTES:																

(11-12) = designates depth sample was collected below ground surface TPH = total petroleum hydrocarbons
TPH-DRO = diesel range TPH
TPH-DRO = diesel range TPH
Mg/kg = milligrams per kilogram
VDEQ-PSS = Commonwealth of Virginia Department of Environmental
Quality (VDEQ) petroleum saturated soil standard
VDEQ-PSSCU = VDEQ Ther II screening concentration for unrestricted use soil (residential)
VDEQ-TSSCU = VDEQ Ther III screening concentration for restricted use soil (commercial/industrial)
ND = not detected above analytical method reporting limit
Bold and right justification designates target compound was detected at a

concentration above RL

Yellow highlighting designates target compound was detected at a concentration above a VDEQ screening concentration in at least 1

TABLE 4B. TEC GROUNDWATER ANALYTICAL RESULTS

FORMER ROBINSON TERMINAL NORTH 500 AND 501 NORTH UNION STREET ALEXANDRIA, VA

Sample ID:	Units	VDEQ-	VDEQ-		VDEQ-CWT		TEC-MW1	TEC-MW2	TEC-MW3	TEC-MW4	TEC-MW5	TEC-MW6	TEC-MW7
		T3RGSL	T3CGSL	WTNC	WTC	ပ							
					Dermal Contact &	Dermal Inhalation							
					Incidential								
Date:							5/1/06	5/1/06	5/1/06	5/1/06	5/1/06	5/1/06	5/1/06
ТРН													
TPH-GRO	mg/L	¥	Ä	Ä	IJ	밀	QV	Q	QV	QN	QN	QV	QN
TPH-DRO	mg/L	¥	N.	N.	Ä	ŊĘ	QN						
VOCs													
Benzene	ng/L	941	1240	1050	863	15	QN	QN	QN	ΩN	ΩN	ΩN	QN
Toluene	ng/L	1920	8070	63100	35000	1020	QN	QN	ΔN	ΩN	ΩN	ΩN	QN
Ethylbenzene	ng/L	27.6	27.6	3380	1410	61	QN	QN	ΔN	ΩN	ΩN	ΩN	QN
Total Xylenes	ng/L	492	2070	5940	11100	87.4	ND	QN	ND	ΠN	ΠN	QN	ND
Methyl-t-butyl ether	ng/L	1330	1970	397000	152000	585	2	2	1	29	ΩN	ΠN	ND
Naphthalene	ng/L	3.98	20.1	73.5	222	0.722	ND	QN	ON	ΠN	ΠN	QN	ND
NOTES:													

TPH = total petroleum hydrocarbons
TPH-DRO = diesel range TPH
TPH-DRO = gasoline range TPH
TPH-GRO = gasoline range TPH
VOCs = volatile organic compounds
ug/L = micrograms per liter
mg/L = militigrams per liter
VDEQ = Commonwelath of Virginia Department of Environmental Quality
VDEQ-13RGSL = VDEQ Ter III residential groundwater screening level
VDEQ-13CGSL = VDEQ Ter III commercial groundwater screening level
VDEQ-TAGCSL = VDEQ contaminants of concern for a construction worker in a trench
WTVC = water table contacted

ND = not detected above anaytical method reporting limit
Bold and right justification designates target compound was detected at a concentration above RL
Green highlighting designates target compound was detected at a concentration above the RL in at least 1 sample
Yellow highlighting designates target compound was detected at a concentration above the VDEQ screening level in at least 1 sample

TABLE 5A. ECS SOIL ANALYTICAL RESULTS (DETECTIONS ONLY)

FORMER ROBINSON TERMINAL NORTH 500 AND 501 NORTH UNION STREET ALEXANDRIA, VA

Sample ID:	Units	VDEQ-	VDEQ-	VDEQ-		33	ECS-B1			ĕ	ECS-B2					ECS-B3		
		PSSS	T2SCU	T3SCR	(1-2.5)	(2.5-4)	(8.5-10)	(18.5-20)	(2.5-4)	(2-6.5)	(8.5-10)		(13.5-15)	(1-2.5)	(2.5-4)	(8.5-10)	(13.5-15)	(28.5-30)
Date:					1/3/08	1/3/08	1/3/08	1/3/08	1/3/08	1/3/08	1/3/08		1/3/08	1/3/08	1/3/08	1/3/08	1/3/08	1/3/08
ТРН																		
TPH-DRO	mg/kg	11000	NE	NE	NA	10200	1060	ON 0	26	NA S		17	20	115	NA	40	UN O	27
VOCs																		
Benzene	ug/kg	NE NE	97.7	5400	NA	ND	2	2.8 ND	ND	NA	ND		11	9.8	NA	5120	ND (ND
2-Butanone (MEK)	ug/kg	ЭN	1250	20000000	NA	ΔN	ΩN	QN	ΔN	NA		7.3 ND	Z	QN	ΑN	QN	QN	QN
n-Butylbenzene	ug/kg	ЭN	14200	5100000	NA	ΔN	ΩN	QN	ΔN	NA	QN	QN	Z	ND	ΑN	QN	QN	QN
sec-Butylbenzene	ug/kg	뵘	뵘	10000000	NA	QN	QN	QV	QN	ΝΑ	QN	QV	Z	ND	NA	QN	ND ON	QN
tert-Butylbenzene	ug/kg	ЭN	NE	10000000	ΑN	ND	ΩN	QN	QN	NA	QN	QN	Z	ND	NA	ΔN	ND	QN
Carbon Disulfide	ug/kg	Ä	492	370000	NA	QN	QN	QN	QN	ΝΑ	QN	g	Z	ND QN	NA	QN	QN	QN
Ethylbenzene	ug/kg	ЭN	5400	27000	NA	QN	ΩN	QN	QN	NA	QN		17	8.6	ΑN	QN	QN	QN
Isopropylbenzene (Cumene)	ug/kg	ЭN	3410	110000	NA	ΩN	ΩN	QN	ΩN	NA	QN	QN	Z	QN	ΑN	QN	ND	QN
p-IsopropyItoluene	ug/kg	ЭN	NE	N	NA	ΩN	ΩN	QN	ΔN	NA	QN	QN	Z	ND	ΑN	QN	DN	QN
Methyl-t-butyl ether	ug/kg	ЭN	41.7	220000	NA	ΔN	ΩN	QN	ΔN	NA	QN	ΩN		4.2	ΑN	QN	2.7	3.2
Naphthalene	ug/kg	ЭN	26.2	18000	NA	136		ON OL	QN	NA	QN		204	7.4	NA	ΔN	84	QN
n-Propylbenzene	ug/kg	NE	5360	2100000	NA	ND	ND	ND	ND	NA	ND	ND	Z	ND	NA	ND	ND	ND
Styrene	ug/kg	NE	2600	3600000	NA	ND	ND	ND	ND	NA	ND	ND		4.2	NA	ND	ND	ND
Toluene	ug/kg	NE	31100	4500000	NA	7.7		13 3.4	4 4.2	NA NA		4.2	4.7	70	NA	196	5.6	2.7
1,2,4-Trimethylbenzene	ug/kg	NE	115	26000	NA	ND	1	13 ND	ND	NA	ND		14	16		ND	10	ND
1,3,5-Trimethylbenzene	ug/kg	NE	658	1000000	NA	ND	1	13 ND	ND	NA	ND		14	7.5		ND	11	
Total Xylenes	ug/kg	NE	63000	270000	NA	3.4	14.1	1 ND	ND	NA	ND		16.3	58	NA	ND	11.1	ND
RCRA Metals																		
Arsenic	mg/kg	NE	3.4	30	4.3	3 NA	NA	NA	NA	1090	NA NA	NA	Z	NA	NA	NA	NA	NA
Barium	mg/kg	NE	1500	19000	82.3	3 NA	NA	NA	NA	6.06	NA P	NA	Z	NA	NA	NA	NA	NA
Cadmium	mg/kg	NE	7	80	ND	NA	NA	NA	NA	23.6	8 NA	NA	Z	NA	NA	NA	NA	NA
Chromium	mg/kg	NE	0.29	63*	16.3	NA	NA	NA	NA	17.5	S NA	NA	Z	NA	NA	NA	NA	NA
Lead	mg/kg	ЭN	270	800	14.9	NA PN	NA	NA	NA	297		N	Z	NA	NA	NA	NA	NA
Mercury	mg/kg	NE	- 1	4.3	ND	NA	NA	NA	NA	75.1		NA	Z	A	NA	NA	NA	NA
Selenium	mg/kg	NE	5.1	510	ND	NA	NA	NA	NA	10.3	3 NA	NA	Z	NA	NA	NA	NA	NA
Silver	mg/kg	N	1.19	510	ND	NA	NA	NA	NA	1.41	NA NA	NA	Z	NA	NA	NA	NA	NA
Pesticides, PCBs, and Herbicides																		
Pesticides					NA	NA	NA	NA	NA	NA	NA	NA	Z	NA	ND	NA	NA A	NA
PCBs					NA	NA	NA	NA	NA	NA	NA	ΑN	Z	NA	ND	NA	NA	NA
Herbicides					NA	NA	NA	NA	NA	NA	NA	NA	Z	NA	ND	NA	NA	NA
MOTES.																		

| For the control of
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TABLE 5A. ECS SOIL ANALYTICAL RESULTS (DETECTIONS ONLY)

FORMER ROBINSON TERMINAL NORTH 500 AND 501 NORTH UNION STREET ALEXANDRIA, VA

Date:		3	י טויי	VDEQ-			ŀ						ECS-B3			
ate: PH		PSSS	T2SCU	T3SCR	(2-9-5)	(13.5-15)	(18.5-20)	(23.5-25)		(28.5-30)	(2.5-4)	(2-6.5)	(8.5-10)		(28.5-30)	(33.5-35)
Н					1/3/08	1/3/08	H	1/3/08	Н	1/3/08	1/3/08	1/3/08	1/3/08	Н	1/3/08	1/3/08
TPH-DRO	mg/kg	11000	NE	NE	123		22 NA		22 ND		95	NA		20	28	ND
VOCs																
enzene	ug/kg	뵘	7.76	5400	QN	9	6.3 NA		4.6 ND	Z	ND QN	ΝΑ	QN	g		3.7
2-Butanone (MEK)	ng/kg	N	1250	20000000	ΠN	QN	NA	QN	QN	Z	٥	NA	ND		7.3 ND	무
n-Butylbenzene	ng/kg	NE	14200	5100000	QN	ND	NA	QN	QN	Z	٥	NA	ΩN	QN		Q.
sec-Butylbenzene	ug/kg	Ä		10000000	QN	QN	ΑN	QN	Q	Z	٥	NA	QN	P		QN
	ua/ka	¥	H	10000000	ON	QN	ΔN	Q	S	Z	0	ΑN	QN	S		S
	ua/ka	Į ų		370000 ND	Q.	9	₹ Z	2	2	Z	ר	NA N	!	3.3 ND		
	ua/ka	¥		27000	2.2		5.1 NA		4.9 ND	Z		Ϋ́	QN	2		
ene (Cumene)	ua/ka	¥	3410	110000	QN	QN	Ϋ́Z		2.5 ND	Z	0	Ϋ́	Q	2		QN
	ua/ka	¥	N.	NE	Q	9	Ψ.V.	QX	2	Z	0	N N	1	166	226	419
	ua/ka	¥	41.7	220000	QN	9	Ψ.V		2.6 ND	Z		Ϋ́	Q	S		QN
	ua/ka	쀨	26.2	18000	QN		ee NA		155	4.9 N	QN	W		14	5.9	!
n-Propylbenzene	ug/kg	¥	5360	2100000	QN		ΑN	QN	Q	Z	0	Ą	QN	2		QN
	ug/kg	¥	2600	3600000	ND	Q	ΑN		Q	Z	ND	ΑN	Q	2		QN
	ng/kg	¥	31100	4500000	16		11 NA		29 ND	Z	٥	NA		4.5	5.7	~
	ug/kg	NE	115	26000	4.9		6.5 NA		12 ND		4			11	9.8	9.3
3,5-Trimethylbenzene	ug/kg	NE	658	1000000	4.7		2.8 NA		2 ND	Z	ND	NA		4.6	3.8	,
Total Xylenes	ug/kg	NE	63000	270000	12.2		9 NA	2,	24.7 ND	N	ND	NA	ND		3.3	3.7
RCRA Metals																
Arsenic	mg/kg	R	3.4	30	NA	NA	NA	NA	NA	Ż	٨		NA 7	NA		٨A
Barium	mg/kg	뵘	1500	19000	NA	ΑĀ	ΑN	ΝΑ	ΑN	Z	NA	66	99.7 NA	Ϋ́		NA
Cadmium	mg/kg	빙	7	80	NA	NA	NA	NA	A	Z	A	3.7	3.79 NA	Ϋ́		٨A
Chromium	mg/kg	빌	0.29	63*	NA	NA	NA	NA	A	Z	٨	25	NA NA	Ϋ́		٩×
ead	mg/kg	빌	270	800	NA	NA	NA	NA	ΑN	Z	٨	1	.5 NA	Ϋ́		٩×
Mercury	mg/kg	NE	1	4.3	NA	NA	NA	NA	ΑN	Z	٨		S NA	ΑN		٨A
Selenium	mg/kg	NE	5.1	510	NA	NA	NA	NA	NA	Z	A	QN	NA	NA		٨A
Silver	mg/kg	NE	1.19	510	NA	NA	NA	NA	NA	Z	A		NA	NA		٨A
Pesticides, PCBs, and Herbicides																
Pesticides					NA	NA	ND	NA	NA	Ż	NA	NA	NA	ΑN		NA
PCBs					NA	NA	ND	NA	NA	Z	٨	NA	NA	Ν		٨A
Herbicides					NA	NA	ND	NA	NA	NA	٨	NA	NA	Ν		NA
NOTES: (10.136) = designates depth sample was collected below ground surface (10.136) = designates depth sample was collected below ground surface TPH-1060 = diesel ranged TPH TPH-1060 = diesel ranged TPH TPH-1060 = diesel ranged TPH	below grou	nd surface														
VOCs = volatile organic compounds																
RCRA = Resource Conservation and Recovery Act PCBs = polychlorinated biphenyls																
ug/kg = micrograms per kilogram mg/kg = miligrams per kilogram																
I not analyzed																
ND = not detected above the analytical method reporting limit VDEQ-PSS = Commonwealth of Virginia Department of Environmental Quality (VDEQ) petroleum	nting limit nt of Enviro	nmental Quali	ty (VDEQ) pet	unejo.												
saturated soil standard	on for more	setricted use so	il (residential)													
VDEQ-T3SCR = VDEQ Tier III screening concentration for restricted use soil (commercial/industrial) Bold and richt in efficient desirants track concentration for detacted as a concentration about	lion for rest	ricted use soil	(commercial/ii	ndustrial)												
total chromium (chromium III and VI)	alia was da	stected at a col	ICEIII all and	74 P.F												
Yellow highlighting designates target compound was detected at a cor	s detected	at a concentral	centration above a VDEQ	DEQ												

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TABLE 5A. ECS SOIL ANALYTICAL RESULTS (DETECTIONS ONLY)

FORMER ROBINSON TERMINAL NORTH 500 AND 501 NORTH UNION STREET ALEXANDRIA, VA

Samule ID:	Unite	VDEQ.	VDEO.	VDEO.				FCS-R6				
		PSSS	T2SCU	T3SCR	(1-2.5)	(2-6.5)	(8.5-10)	(13.5-15)	(18.5-20)	(23.5-25)	(28.5-30)	
Date:					1/3/08	1/3/08	1/3/08	1/3/08	1/3/08	1/3/08	1/3/08	
ТРН												П
TPH-DRO	mg/kg	11000	NE	NE	NA	142	111	31	89	NA		33
VOCs												
Benzene	ug/kg	NE	7.76	5400	NA	226	QN	91	16 ND	NA	ΩN	
2-Butanone (MEK)	ug/kg	NE	1250	20000000 NA	NA	ΔN	QN	QN	QN	NA	ΩN	
n-Butylbenzene	ug/kg	NE	14200	5100000 NA	NA	998	366 ND	3.2	3.2 ND	NA	3	3.6
sec-Butylbenzene	ug/kg	Ä	NE	10000001	NA	QN	QN	26	26 ND	NA	QN	
tert-Butylbenzene	ug/kg	N	NE	10000001	NA	ND QN	QN	11	11 ND	NA	ND	
Carbon Disulfide	ug/kg	NE	492	370000	NA	ΔN	QN	QN	QN	NA	ΔN	
Ethylbenzene	ug/kg	NE	5400	27000	NA	1360 ND	QN	6.4	6.4 ND	NA	ND	
Isopropylbenzene (Cumene)	ug/kg	NE	3410	110000	NA	ND	QN	8.4	8.4 ND	NA	ND	
p-Isopropyltoluene	ug/kg	NE	NE	NE	NA	473	473 ND	3.8	3.8 ND	NA	ND	
Methyl-t-butyl ether	ug/kg	NE	41.7	220000	NA	ND	QN	QN	ND	NA	ND	
Naphthalene	ug/kg	NE	26.2	18000	NA	ND	QN	2.2	5.2 5500	NA	ND	
n-Propylbenzene	ug/kg	NE	5360	2100000	NA	ND	QN	2.8	5.8 ND	NA	2.	.7
Styrene	ug/kg	NE	2600	3600000	NA	ΔN	QN	QN	QN	NA	ND	
Toluene	ug/kg	NE	31100	4500000	NA	3800	238		36 ND	NA	2	2.9
1,2,4-Trimethylbenzene	ug/kg	NE	115	26000	NA	1050	020 ND	18	18 ND	NA		19
1,3,5-Trimethylbenzene	ug/kg	NE	658	1000000	NA	1870 ND	QN	11	11 ND	NA	6	9.8
Total Xylenes	ug/kg	NE	63000	270000	NA	4209	361	38	38 ND	NA	3	3.5
RCRA Metals												
Arsenic	mg/kg	NE	3.4	30	NA	NA	NA	NA	NA	9'9	6.6 NA	
Barium	mg/kg	NE	1500	19000	NA	NA	NA	NA	NA	46	46 NA	
Cadmium	mg/kg	NE	7	80	NA	NA	NA	NA	NA	ND	NA	
Chromium	mg/kg	NE	0.29	63*	NA	NA	NA	NA	NA	49.9 NA	NA	
Lead	mg/kg	NE	270	800	NA	NA	NA	NA	NA	39.5 NA	NA	
Mercury	mg/kg	NE	- 1	4.3	NA	NA	NA	NA	NA	VN 90.0	NA	
Selenium	mg/kg	NE	5.1	510	NA	NA	NA	NA	NA	QN	NA	
Silver	mg/kg	NE	1.19	510	NA	NA	NA	NA	NA	QN	NA	
Pesticides, PCBs, and Herbicides												
Pesticides					ND	NA	NA		ND	NA	NA	
PCBs					ND	NA	NA		ND	NA	NA	
Herbicides					ND	NA	NA	NA	ND	NA	NA	

Herrocides

(10128) - designates depth sample was collected below ground surface
(10128) - designates depth sample was collected below ground surface
TPH ± total periodenum hydrocarbons
TPH ± total periodenum h

DRAFT

TABLE 6C. 2016 ICOR SOIL ANALYTICAL REBULTS (DETECTIONS ONLY) FORMER ROBINSON TERMINAL NORTH SOO AND 501 NEWTH MONUSTREET LECKNERA, NA

		o L	0.00	-	H	- 1		- 1			-	H	H	H	H	H	ŀ	H	H	
Sample ID:	CAS No. Units	VDEQ-	VDEQ-	VDEQ- T3SCR	ECS-B7(1-2)	ECS-B7(5-6) ICOR-S	ICOR-SB3(10.5-11.5) ICOR-SB9(4-5)		ICOR-SB14(1-2) ICOR-SB14(4-5)	4-5) ICOR-SB15(1-2)	2) MiHpt-03(1-2)	MiHpt-03(4-5)	MiHpt-04(1-2) M	MiHpt-04(4-5) Mil	MiHpt-05(1-2) Mil	MiHpt-06(1-2) MiH	MiHpt-06(4-5) Mil	MiHpt-07(1-2) Mi	MiHpt-07(7-8) M	MiHpt-08(4-5)
Sample Date:					9/7/16	9/7/16	9/7/16 9/7/16	o	7/16 9/7/16	9/7/16	9/6/16	9/6/16	9/6/16	9/6/16	9/7/16	9/6/16	9/6/16	9/6/16	9/6/16	9/6/16
	C6C10GRO mg/kg	8300	NE	NE	₹	<0.12 NA		NA	NA	NA		A		NA	NA	NA	AN		1300	0.260
28)	C10C28DRO mg/kg	11000	NE	NE NA		100	13 NA	NA	NA	NA			NA	NA	NA	NA	NA		59 <12	
Acetone	67-64-1 ua/ka	Ä	2750	63000000 NA	V	<23 NA	ΑN	ΝΑ	Ν	ΑN	₹ Z	NA		Ϋ́Z	Ϋ́	Ϋ́	¥.	>190	20 <17	
Cyclohexane	110-82-7 ug/kg	N.	55500	2700000 NA	~		NA	Ν	NA	NA				AN	AN	Ϋ́	Ν	<190		
	_	₩!	39700	250000 NA	¥	<5.7 NA	NA	Ϋ́	NA.	NA				NA NA	¥.	NA	AN	<460		
		¥.	3940	1100000 NA	₹ !		AN	¥:	NA:	A :				NA.	Y.	NA.	Y.	<460		
Metnyicyclonexane		2 1	NE S	NE NA	7		NA NA	N V	¥ N	N N				NA NA	AN V	¥ 2	4 5	×190		
00	91-20-3 ug/kg	Į Į	80.7	39000	,	007	A W	AN AN	¥ ¥	NA NA				Y S	N N	¥ ×	NA NA	240I		
Tollepe	108-88-3 IIO/kg	ž Ž	31100	4700000 NA	/ *	25.7 NA	AN	Y V	Z AN	AN AN				¥ AN	¥ ×	Y AV	¥ AN	C46		
000		1 12	0110	240000	- 113		48	V V	ΑN	V V				V V	Z AN	VA.	AN AN	203		
o-Xylene		¥	926	280000 NA	25.7		NA	ž	¥ X	YA.				Y Y	Y Y	¥.	AN	<46		
TCL SVOCs 8270C	Γ																			
4	91-57-6 ua/ka	N.	1100	300000 NA	AN		ΨN	AN	W	NA				AN	W	AN	Ϋ́	X		
	Г	¥	32100		AN		ΨN	AA	NA	NA.				AN	AN	AN	W	×		
Anthracene	120-12-7 ua/ka	¥	354000	23000000 NA	AN		ΨZ	AA	AN	AA				NA	AN	AN	NA	¥		
thracene		NE	1500	_	AN		ΑN	NA	NA	ΝΑ				AN	NA	NA	ΑN	NA		
Benzo(a)pyrene		J.	150		AN		ΨN	ΝΑ	NA	NA				AN	NA	NA	AN	NA		
Benzo(b)fluoranthene	<u>م</u>	N	1500	29000 NA	ΑN	A NA	NA	ΑĀ	Ν	NA				AN	AN	Ϋ́	NA	Ν	NA	
		NE	170000	2300000 NA	NA		NA	NA	ΝA	NA				AN	NA	AN	AN	NA		
Benzo(k)fluoranthene		NE	15000	290000 NA	NA		NA	Ν	NA	NA				NA	NA	NA	NA	NA		
	П	NE	150000	2900000 NA	2		NA	NA	NA	NA				NA	NA	NA	NA	NA		
Dibenz(a,h)Anthracene		Ä	150	2900 NA	NA		NA	NA	NA	NA				NA	NA	NA	NA	NA		
		Ä	870	100000 NA	ż		NA	Ν	NA	NA				NA	NA	NA	NA	NA		
Fluoranthene		¥	230000	3000000 NA	ż		NA	ΑN	ΝA	NA				NA	ΝA	Ϋ́	ΝA	NA NA		
Fluorene		¥	31900	3000000 NA	ż		NA	ΝΑ	NA	NA				AN	NA	ΝA	AN	NA		
Indeno(1,2,3-c,d)Pyrene	193-39-5 ug/kg	N.	1500	29000 NA	NA		NA	ΝA	NA	NA				NA	NA	NA	AN	NA		
Naphthalene	91-20-3 ug/kg	¥	114	59000 NA	ż	A NA	NA	Ν	NA	NA				NA	NA	NA	AN	NA		
Phenanthrene	T	Ä	34900	Z300000 NA	ż		NA	A	NA	ΑN				AN	NA	AA	NA	AA		
Pyrene	129-00-0 ug/kg	¥	90300	Z3000000 NA	ΝΑ		AN	NA	NA	AN				NA	NA	NA	AN	NA		
PCBs 8082	wallow			20.02	Z Z	V0.080	850.02	VIV	VIV	NA	VIV	VV	ÝN.	2	Š	Ý.	Š	VIV	Ý.	
Posticides 8081B	2			20.0		0000	00000	<u> </u>	S	C.				ç	5	5	Ş	S	S	
44-DDD	72-54-8 ua/ka	NE	4370	00096	6.1	AN	ďΖ	×	Ą	NA	AN	NA	AN	AN	AN	Ą	Ϋ́	N.	AN	
4.4-DDE	72-55-9 ua/kg	Ä	16000	00089	15 N	A	AN	ΝΑ	Ν	ΑN				AN	AA	ΑN	ΑN	AN	NA	
4,4-DDT	50-29-3 ug/kg	NE	3600	52000	7.0 N	A NA	NA	NA	NA	NA				NA	NA	Ā	ΑN	NA	NA	
Herbicides 8151A																				
2,4,5-T	93-76-5 ug/kg	NE	NE	NE <22	AN	A NA	NA	NA	NA	NA	NA	NA NA	AN	NA	NA	ΑN	Ν	NA	NA	
Dioxins 8290A																				
2,3,7,8-TCDD	1746-01-6 ng/kg	Ä	5.1	73 NA	AN	A NA	NA	NA	NA	0.0670	JO NA	NA NA	NA	AN	AN	Ą	Ν	NA	NA	
PPL Metals 6020A																				
Antimony	7440-36-0 ma/kg	W	3.1	41 <2.5	ż		ΨZ	ΝΑ	¥	ΑN	<2.6	NA NA	<2.0 NA	AN	<2,5		17 NA	NA	NA	
Arsenic	7440-38-2 ma/kg	W	3.4	30	AN 64		ΨN		9.1	NA		190	3.9	320	2.2	1.2	150	1.0 NA	NA	
Cadmium	43-9	N.	7	98			ΨN	ΝA	AN	NA			ı		<2.5	<2.5	Г	Г	AN	
Chromium	Ι.	. H	*60 0	*89	17 N	AN AN	- AN	ΑN	AN	AN	5.5		4.0			F		AN	AN	
Constitution	Т	1 12	240	4400	20 NA			VIV	4	VIV	ı					0.0	Т	VIV	VIV	
Coppe	Т	2 12	070	000	T		Ç ş	S SN	V VV	S VI	2, 66	< <				6.7		V. VI	VN VN	
Marchine	7430-07-6 mo/kg	u u	000	200	4.3 NI		2	VIV	Ž	VIV.			VIV POU O			0.12	Т	VIV	VIN	
Nickel	Т	L L	39.1	2000	14 NA		ΨN	ΨN	ΨN	ΨN						3.5	Т	ΔN	ΨN	
Salaniim	7782-49-2 malka	L L	5.1	510	Т		ΨN	ΨN	Ϋ́	ΝA			NA NA		<0.5			AZ	AN	
Silver	7440-22-4 malka	l W	1 19	510	Ž		- AN	ΑN	AN	AN					0.5			AN	AN	
Thallium	7440-28-0 malka	. W	0.078	1 00	Ż		- AN	ΑN	AN	ĄV					000			AN	NA	
Zinc	J.,		584	31000	130 NA	AN	ΨN	ΨN	ΨN	ΨN	- 40	ΔN	16 NA	ΨN		15	370 NA	ΔN	ΨN	
NOTES:			5	2000	1		C.	Ç	S	S			П			2	1	CAL .	C)	Ī
(0.5-1.5) = designates depth sample was collected below ground surface	below ground surface																			
TPH = total petroleum hydrocarbons																				
TPH-GRO = gasoline range TPH																				
TCL = Target Compound List																				
VOCs = volatile organic compounds																				
PCBs = pelychlorinated biphenyls																				
PPL = Priority Pollutant List																				
EPA 8260B = United States Environmental Protect	ion Agency SW-846 analyti	cal method																		
ugikg = micrograms per kilogram																				
mg/kg = milligrams per kilogram																				
NA = not analyzed <1.0 = not detected above analytical method report.	ing limit (BL)																			
VDEQ-PSS = Commonwealth of Virginia Departme	ant of Environmental Quality	v (VDEQ) petrole.	num saturated s	iol standard																
VDEQ-T2SCU = VDEQ Tier II screening concentra.	vion for unrestricted use so.	(residential)	(Printer																	
V DECKT 1950/N = Y DECKT for the first eneming contrained to the visit to the sour (commerce eneminate in a). * = total chromium (chromium III and VI)	ellott for reserved was seen	(Millimeters)	Jallien,																	

TABLE 6C. 2016 ICOR SOIL ANALYTICAL REBULTS (DETECTIONS ONLY)
FORMER ROBINSON TERMINAL NORTH
SOO AND 501 NEWTH MONUSTREET
LECKNERA, NA

NE N	Sample ID:	CAS No. Un	Units VD	VDEQ- VD	VDEQ- VDEQ-		MiHpt-08(37.8-38.8) MiHpt-10(24.5-25.5)		MiHpt-12(1-2)	MiHpt-13(1-2)	MiHpt-13(4-5)	MiHpt-14(1-2)	MiHpt-14(4-5) N	MiHpt-14(5-6) N	MiHpt-14(25-26)	MiHpt-15(1-2)	MiHpt-15(4-5)	MiHpt-16(1-2)	MiHpt-16(4-5)	MiHpt-16(8-9)	MiHpt-17(1-2)	MiHpt-17(4-5)	MiHpt-18(1-2)
Control Cont	Sample Date:			H	H			3/6/16	9/7/16	9/7/16	9/7/16	9/8/16	9/8/16	9/8/16	9/8/16	9/8/16	9/8/16	9/8/16	9/8/16	9/8/16	9/7/16	9/7/16	9/7/16
Column C	TPH 8015			H																			
1971 1971	TPH-GRO (C6-C10)			_		Įį.	0.160								1	NA	NA	NA	NA				١A
1871 1971	TPH-DRO (C10-C28)	C10C28DRO mg	+	+												NA	NA	NA	NA				٩A
	ICL VOCS 8260B		+	+	+	1								Т									,
	Acetone		+	1	+									42			NA.	NA:	NA:				A.
	Cyclonexane		+	_	+		/7>	N.									NA.	NA.	NA.				A.
	Emylperzene	1	+	+	+		6.0	Z :									NA.	NA.	NA.				A.
	Isopropyiberizene		+	+	$^{+}$	Т	8:07	YN.									Y.	Y.	Y.				¥ :
	Methylcyclohexane		+	+	-	7	/2	П									NA	NA	NA				A
1	Naphthalene			1	-												NA	NA	NA				4A
	Tetrachloroethene		-	_			6.9>	NA									NA	NA	NA				ΑA
	Toluene				_		6'9>	NA									NA	NA	NA				V.
	m.p-Xvlenes				H		<14	NA									NA	NA	NA				¥×
	o-Xylene		-	h	H		6.9>	Ϋ́									NA	Ą	AN				¥
N. B. 10, 10, 10, 10, 10, 10, 10, 10, 10, 10,	TCL SVOCs 8270C		ŀ																				
	2-Methylnaphthalene		H	H	H											NA.	NA	W	NA				A/A
	Acenanhthene		ŀ	H	H											NA.	NA	NA	NA				AA.
ME 150 550 550 550 550 550 550 550 550 550 550 550 550 550 550 550 550 550 550 550 550 550 550 550 550 550 550 550 550 550 550 550 550 550 550 550 550 550 550	Anthracene	L	L	t	٠			Г								٨٨	NA	AN	NA				A.A
ME 179 500	Benzolalanthracene	Γ	ŀ	F	٠			Г								ΔV	NΔ	ΔN	ΔN				Δb
4. Ket 1500 5.000	Denne (a) consequent	T	$\frac{1}{1}$	H	t			T								9	VIV.	VIV	C VI				9
	Desire/b)fluoreethone	T	1	t	۰			T								- N	NA NA	NA NA	Y V				
	Belizo(D)ligoralitiene	T	+	+	+			T								NA.	VAI.	NIA NIA	V .				× ×
	Benzo(g,n,i)perylene		+	+	+			Т								NA.	NA.	NA.	NA.				A.
No. Benzo(k)fluoranthene		1		+			T								NA	NA	NA	NA				A.	
44 44<	Chrysene		-	1	+											NA	NA	NA	NA				A
44 45 46<	Dibenz(a,h)Anthracene		_			Т		П								NA	NA	NA	NA				ΑA
94 ME 25000 2500 MA MA <t< td=""><td>Dibenzofuran</td><td></td><td></td><td></td><td>_</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>NA</td><td>NA</td><td>NA</td><td>NA</td><td></td><td></td><td></td><td>٩A</td></t<>	Dibenzofuran				_											NA	NA	NA	NA				٩A
National N	Fluoranthene	0		+	-											NA	NA	NA	NA				ΑA
4 4	Fluorene			1	-											NA.	NA	NA	NA				ΑA
4 4	Indeno(1,2,3-c,d)Pyrene			1												NA.	NA	NA	NA				ΑA
44 45 45 46<	Naphthalene		_		+											NA.	NA	NA	NA				ΑA
1	Phenanthrene		_		+			Т								NA.	NA	NA.	NA				ΑA
1	Pyrene		4	1	+	_		П								NA	NA	NA	NA				۱A
1	PCBs 8082																						
Name Name <th< td=""><td>PCBs</td><td>Sm.</td><td>3/kg</td><td></td><td></td><td>NA</td><td>NA</td><td>NA</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>NA</td><td><0.059</td><td><0.061</td><td></td><td></td><td></td><td>۱A</td></th<>	PCBs	Sm.	3/kg			NA	NA	NA									NA	<0.059	<0.061				۱A
90 NE 477 88000 NA NA <th< td=""><td>Pesticides 8081B</td><td></td><td></td><td>H</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></th<>	Pesticides 8081B			H																			
National N	4,4-DDD						ΑN	NA									NA	<4.7	6.4.9				AA.
9 M	4,4-DDE		_				NA	NA									NA	<4.7	<4.9				4A
NE SE SE NE NE<	4,4-DDT		_				NA	NA									NA	<4.7	<4.9				NA.
Name Name <th< td=""><td>Herbicides 8151A</td><td></td><td></td><td>H</td><td>_</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></th<>	Herbicides 8151A			H	_																		
No. 2,4,5-T						NA	NA									NA	<25	<25				١A	
1	Dioxins 8290A																						
NE 514 61 NA	2,3,7,8-TCDD		-				NA	NA									NA	0.115 J	NA				١A
	PPL Metals 6020A																						
	Antimony						ΝΑ	NA										NA	NA				ΑA
Name	Arsenic						NA		400				93			9.6	,	NA	NA			6.9	12
	Cadmium			NE .	7 9.		ΝA	NA			Α.						NA	NA	NA	NA			4A
Name Name <th< td=""><td>Chromium</td><td></td><td></td><td></td><td></td><td>** NA</td><td>NA</td><td>NA</td><td></td><td></td><td>V.</td><td></td><td></td><td></td><td>A</td><td></td><td>NA</td><td>NA</td><td>NA</td><td>NA</td><td></td><td></td><td>NA.</td></th<>	Chromium					** NA	NA	NA			V.				A		NA	NA	NA	NA			NA.
No. Copper				-	Ī	NA	NA			A				A		NA	NA	NA	NA			NA.	
N	Lead				_		Ν	NA			Ą				×		NA	NA	NA	NA			¥
NE 51 2000 NA NA NA 12 NA N	Mercury				_	ΑΝ	ΑN	NA			Ą				×		NA	NA	AA	NA			¥
N	Nickel						NA	NA			V.					12	NA	NA	NA	NA			4A
N	Selenium					NA 0	NA	NA			Α.						NA	NA	NA	NA			4A
NG NE 584 31000 NA NA NA 7200 NA 1300 NA	Silver		4				NA	NA			Ą						NA	NA	NA		16		٨٨
NG NE 584 31000 NA	Thallium	Т	_	_	+		AA	AN			A	- 11					NA	ΝΑ	NA				ΑA
	Zinc	7440-66-6 mg	/kg	-	-		NA	NA			A				A	-	NA	NA	NA	NA	4300		ΑA

TABLE 6C. 2016 ICOR SOIL ANALYTICAL RESULTS (DETECTIONS ONLY)
FORMER ROBINSON TERMINAL NORTH
SOLAND SOIN TORRH UNDOLY STREET
ALEXANDRA, NO. STREET

The content of the			1	CICCOGNO mg/gg 8300 NE NE NE NA CICCOGNO mg/gg 71000 NE NE NE NA CICCOGNO mg/gg 71000 NE NE NE NA CICCOGNO mg/gg 71000 NE NE NE NA CICCOGNO MG 71000 NE NE NA CICCOGNO MG 71000 NE NA CICCOGNO MG 7100 NE NA CICCOGNO MG 71000 NE NA CICCOGNO MG 710
1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1,	No.	1 1 1 1 1 1 1 1 1 1	19	CHOCACONO Implies S200
1, 10, 10, 10, 10, 10, 10, 10, 10, 10,	1	1		COCCURRENO PROPER RESPONDED PROPER RESPONDED
1, 10, 10, 10, 10, 10, 10, 10, 10, 10,	1	1	19 19 19 19 19 19 19 19	C10220300 Physic 14000 NE NE
				10-27 10-2
1, 10, 10, 10, 10, 10, 10, 10, 10, 10,	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1	No.	10.027 10.027 10.000 1
1, 10, 10, 10, 10, 10, 10, 10, 10, 10,	1		64 340 M.M. M.	100-14-4 193/9 NE 391/0 200000 100-14-4 193/9 NE 391/0 100-14-4 100-14
	1, 10, 10, 10, 10, 10, 10, 10, 10, 10,	1, 10, 10, 10, 10, 10, 10, 10, 10, 10,	Column C	10,000.00 10,0
			61 101 80000 NA NA <th< td=""><td> 17.10 17.1</td></th<>	17.10 17.1
1, 10, 10, 10, 10, 10, 10, 10, 10, 10,	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1	46 510 NA	109-883 9 9959 NE 8107 9 9000
11.00 11.0	1	1	61 51 61<	106-853 19/99 NE 31100 4700000 106-853 19/99 NE 31100 4700000 106-853 19/99 NE 31100 4700000 106-853 19/99 NE 32400 2300000 106-859 19/99 NE 32400 2300000 106-859 19/99 NE 32400 23000000 106-859 19/99 NE 32400 32000000 106-859 19/99 NE 32400 3200000 106-859 19/99 NE 31400 32000000 106-959 19/99 NE 31400 32000000 32000000 32000000 32000000 320000000 32000000 32000000 32000000 32000000 32000000 320000000 32000000 32000000 32000000 32000000 32000000 32000000 32000000 32000000 32000000 32000000 32000000 32000000 32000000 32000000 32000000 32000000 320000000000
Column C	1 10 10 10 10 10 10 10	1 10 10 10 10 10 10 10	Column C	10.54.54 19/20 NE 254 2000000
1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1,	1, 10, 10, 10, 10, 10, 10, 10, 10, 10,	1	Column C	14.24 12.00 14.25 12.00 12.0
1,100 1,100 1,10	1,100 1,100 1,10	1,100 1,000 1,10	Column C	10,000 1
	No.	No.	1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1,	1872.50 100/20 100
			1,2,000 2,000 M	100.0127 100.000 100
		1, 10, 10, 10, 10, 10, 10, 10, 10, 10,	1, 10, 10, 10, 10, 10, 10, 10, 10, 10,	125-12-12 100/20 100 1
Column C	Column C	1	1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1,	10,000,000 10,000
		Column C		10,000,000 10,000
Column C	Column C	Column C	1500 1500	10,000.000 10,000
			1,5000 1	100,000 100,
			Colored Colo	12,000.00 12,0
6 750	1	1	15 15 15 15 15 15 15 15	125-6-29 125-6-24 125-6-25
E. 20000 N. M.	E 1700 NAT	E 1700 NAT	Fig. 2000 No.	
6. 15.000 36.000 M. M.	4. 10.0000 N. 10.0		Fig. 2000 Fig.	2006-440 We
1	1	1		100,000 100,
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C			1	mg/kg NE 77 98 mg/kg NE 310 4100 mg/kg NE 270 800
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— The age of properties of the composition of the c	In high Composited at the composition of the compos	Control and Composed test and Composed test and Control and Contro	I ingile Composed Leat I ingile Composed Leat I ingile Composed Leat For the Composed Le	-GRO = gasoline range TPH
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TABLE 7A. ICOR 2013 GROUNDWATER ANALYTICAL RESULTS (DETECTIONS ONLY)

FORMER ROBINSON TERMINAL NORTH 500 AND 501 NORTH UNION STREET ALEXANDRIA, VA

Sample ID:	CAS No.	Units	VDEQ-	VDEQ-		VDEQ-CWT		ECS-MW2	ECS-MW4	ICOR-SB1(GW) ICOR-SB5(GW) ICOR-SB6(GW) ICOR-SB7(GW) ICOR-SB8(GW)	ICOR-SB5) (GW)	JR-SB6(GW)	ICOR-SB7(GV	w) ICOR	-SB8(GW)	ICOR-SB9(GW)
			T3RGSL	T3CGSL	WTNC	WTC											,
						Dermal Contact & Incidential	Inhalation										
Date:								10/08/2013	10/08/2013	10/08/2013	10/08/2013		10/08/2013	10/08/2013		10/08/2013	10/08/2013
TPH EPA 8015												ŀ			-		
TPH-GRO		mg/L	NE	빌	뮏	¥	NE	2.8	<0.1	<0.1	ö	25	0.21	0.18		11	0.25
TPH-DRO		mg/L	NE	NE	뵘	Ŗ	NE	0.91	0.15	0.17	0	0.30	0.11	0.16		0.93	0.77
TCL VOCs EPA 8260B																	
Benzene	71-43-2	T/bn	941	1240	1050	863	15	160	<1.0	<1.0		49	20	1.7		22	7.4
Cyclohexane	110-82-7	ng/L	102	429	9780	Ä	3420		<10	<10	<10	<10		<10		710	
Ethylbenzene	100-41-4	ng/L	27.6	27.6	3380	1410	61	47	<1.0	<1.0		15	7.7	<1.0		80	<1.0
Isopropylbenzene	98-85-8	ng/L	88.7	373	3450	6400	92.5	2.9	<1.0	<1.0	.,,	3.5 <1.0	0	1.2	<10		<1.0
Methylcyclohexane	108-87-2	ng/L	17.7	74.5	650	¥	624	230	<10	<10	<10	<10		<10		520	<10
Naphthalene	91-20-3	ng/L	3.98	20.1	73.5	222	0.722	73	<1.0	<1.0		29	27	<1.0		20	19
Toluene	108-88-3	ng/L	1920	8070	63100	35000	1020	5.8	<1.0	<1.0	<1.0	<1.0	0	<1.0		16	1
m,p-Xylenes	108-38-3	ng/L	71.5	149	1330	5270	21.8	17	<2.0	<2.0	4	4.8	2.9	<2.0		92	<2.0
o-Xylene	95-47-6	ng/L	51.9	207	1830	5870	21.9	28	<1.0	<1.0		21	3.2	<1.0	<10		<1.0
TCL SVOCs EPA 8270C																	
Acenaphthene	83-32-9	T/Bn	N.	ÿ.	뵘	2870	NE	<11	41	7.2	<5.0	<5.0	0	<5.0	<11		27
Acenaphthylene	208-96-8	T/Bn	JN	NE	ŊĘ	1460	NE	<11	<5.0	<5.0	<5.0	<5.0	0	<5.0	<11		8.5
Anthracene	120-12-7	ng/L	NE	NE	NE	1660	NE	<11	<5.0	<5.0	<5.0	<5.0	C	<5.0	<11		7.3
Biphenyl (Diphenyl)	92-52-4	ng/L	3.31	13.9	1800	1160	1.23	<11	<5.0	<5.0	<5.0	<2.0	C	<5.0	<11		9.3
Carbazole	86-74-8	ng/L	NE	NE	NE	NE	NE		<5.0	<5.0	<5.0	<5.0	C	<5.0	<11		8.7
Dibenzofuran	132-64-9	ng/L	NE	NE	NE	47.1	NE	<11	<5.0	<5.0	<5.0	<5.0	C	<5.0	<11		22
Fluoranthene	206-44-0	T/Bn	NE	JN.	R	304	N	<11	<5.0	<5.0	<5.0	<5.0	0	<5.0	<11		1
Fluorene	86-73-7	T/bn	N.	N	밀	4250	N	<11	6'9	<5.0	<5.0	<5.0	0	<5.0	<11		30
Naphthalene	91-20-3	ng/L	3.98	20.1	73.5	222	0.722	36	<5.0	<5.0	<5.0		8.4	<5.0	<11		13
Phenanthrene	85-01-8	ng/L	JN	NE	NE	1430	NE	<11	<5.0	<5.0	<5.0	<5.0	C	<5.0	<11		25
Pyrene	129-00-0	ng/L	NE	NE	뵘	998	NE	<11	<5.0	<5.0	<5.0	<5.1	C	<5.0	<11		8.
Total PPL Metals EPA 6020A																	
Antimony	7440-36-0	ng/L	NE	NE	NE	NE	NE	<5.0	<5.0	<5.0	<5.0	<5.0		<5.0	NA		9.6
Arsenic	7440-38-2	ng/L	NE	NE	NE	NE	NE	95	38	120	4	480	400	15	NA		370
Beryllium	7440-41-7	ng/L	NE	NE	NE	NE	NE	26	<1.0	<1.0	٠	09	1.8	<1.0	NA		<1.
Cadmium	7440-43-9	ng/L	NE	NE	NE	36	NE	31	<1.0	13		32	6.7	<1.0	NA		2.5
Chromium	7440-47-3	T/Bn	NE	JN	ŊĘ	26.6	NE	180	<1.0	24	2	270	39	3.7			3.5
Copper	7440-50-8	ng/L	NE	NE	NE	24600	NE	3300	<1.0	200	20	2000	190	1.4			150
Lead	7439-92-1		NE	NE	NE	NE	NE		14	230	9			3.2			92
Mercury	7439-97-6		290'0	0.281	5.59	NE	0.895	0.72	<0.20	0.38	.0	0.26 <0.20		<0.20	NA		0.40
Nickel	7440-02-0	ng/L	NE	NE	NE	4750	NE		<1.0	38	15	009	33	2.9			9.9
Selenium	7782-49-2	ng/L	JN	NE	NE	3080	NE	<5.0	<1.0	3.7	7		7.6	<1.0	NA		<1.0
Silver	7440-22-4	ng/L	NE	NE	NE	469	NE	<1.0	<1.0	3.7	<1.0	<1.0	C	<1.0	NA		<1.0
Thallium	7440-28-0		NE	NE	Ä	24.6	R	1.1	<1.0	1.0	1.0	<1.0		<1.0			<1.0
Zinc	7440-66-6	ng/L	뮏	빌	뮏	220000	빌	19000	<20	0069	21000	_ 0	1800	28			8200

TABLE 7A. ICOR 2013 GROUNDWATER ANALYTICAL RESULTS (DETECTIONS ONLY)

FORMER ROBINSON TERMINAL NORTH 500 AND 501 NORTH UNION STREET ALEXANDRIA, VA

Sample ID:	CAS No.	Units	VDEQ-	VDEQ-		VDEQ-CWT		ECS-MW2	ECS-MW4	ICOR-SB1(GW)	ICOR-SB5(GW)	ICOR-SB6(GW)	ICOR-SB7(GW)	ECS-MW4 ICOR-SB1(GW) ICOR-SB5(GW) ICOR-SB6(GW) ICOR-SB3(GW) ICOR-SB3(GW)	ICOR-SB9(GW)
			T3RGSL	T3CGSL	WTNC	WTC	O								
						Dermal	Inhalation								
						Contact &									
						Incidential Ingestion									
Date:								10/08/2013	10/08/2013	10/08/2013	10/08/2013	10/08/2013	10/08/2013	10/08/2013	10/08/2013
Dissolved PPL Metals EPA 6020A															
Arsenic	7440-38-2	ng/L	J.	Ŋ	Ä	Ä	¥	1.4	<1.0	14	420	38	2.0	NA	25
Beryllium	7440-41-7	ng/L	NE	ΞN	J.	Ä	NE NE	<1.0	<1.0	<1.0	32	<1.0	<1.0	NA	<1.0
Cadmium	7440-43-9	ng/L	NE	ЭN	N.	36	¥	<1.0	<1.0	6.4	68	<1.0	<1.0	NA	<1.0
Chromium	7440-47-3	ng/L	NE	ЭN	J.	26.6	NE NE	<1.0	<1.0	<1.0	720	<1.0	<1.0	NA	<1.0
Copper	7440-50-8	ng/L	N.	Ŋ	뮐	24600	¥	<1.0	<1.0	52	1000	3.0	<1.0	NA	<1.0
Lead	7439-92-1	ng/L	NE	∃N	NE	Ä	NE NE	<1.0	<1.0	2.9	820	<1.0	<1.0	NA	<1.0
Mercury	7439-97-6	ng/L	0.067	0.281	5.59	¥	- 268.0	<0.20	<0.20	<0.20	0.25	<0.20	<0.20	NA	<0.20
Nickel	7440-02-0	ng/L	NE	ЭN	NE	4750	N.	1.5	<1.0	24	1500	3.8	<1.0	NA	3.0
Selenium	7782-49-2	ng/L	NE	ЭN	PE	3080	¥ N	<1.0	<1.0	1.7	4.3	7.2	<1.0	ΝΑ	<1.0
Zinc	7440-66-6	T/bn	NE	ΞN	¥	220000	¥	130	<20	4200	23000	230	<20	NA	6400
CLIE															

NOTE:

The total periotem hydrocarbons
TPH-LDRO = diseal range TPH
TPH-DRO = diseal range TPH
TCL = Tanger Compound List
VOCs = volutile compounds
SVOCs = semi-VOCs or volutile compounds
SVOCs = semi-VOCs or volutile range TPH
TPH-DRO = disease The transmission of the compounds
SVOCs = semi-VOCs or volutile organic compounds
SVOCs = semi-VOCs or volutile organic compounds
SVOCs = semi-VOCs organic transmission or compounds
PPA &260B = United States Environmental Drotection Agency SW-446 analytical method
ugL = minigrans per filer
mgL = minigrans per filer
mgL = minigrans per filer
mgL = minigrans per filer
VDEQ-T3RGSL = VDEQ Tier III residential groundwater screening level
VDEQ-T3RGSL = VDEQ Tier III residential groundwater screening level
VDEQ-T3RGSL = VDEQ Tier III residential groundwater screening level
VDEQ-T3RGSL = VDEQ Tier III residential groundwater screening level
VDEQ-T3RGSL = VDEQ Tier III residential groundwater screening level
VDEQ-T3RGSL = VDEQ Tier III residential groundwater screening level
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VDEQ-T3RGSL = VDEQ Tier III residential groundwater screening level
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VDEQ-T3RGSL = VDEQ Tier III residential groundwater screening level
VDEQ-T3RGSL = VDEQ Tier III residential groundwater screening level
VDEQ-T3RGSL = VDEQ Tier III residential groundwater screening level
VDEQ-T3RGSL = VDEQ TIER III residential groundwater screening level

TABLE 7B. GROUNDWATER ANALYTICAL RESULTS (OBTAINED DURING UST REMOVAL AND INCLUDES COMPARISON TO HISTORICAL DATA)

FORMER ROBINSON TERMINAL NORTH 500 AND 501 NORTH UNION STREET ALEXANDRIA, VA

Sample ID:	Units	VDEQ-			VDEQ-CWT		VDEQ-	TEC	TEC-MW2	TEC	TEC-MW3	TEC	TEC-MW4	TEC	TEC-MW5
		T3RGSL		WTNC	WTC	2	WCS								
					Dermal	Inhalation									
					Contact & Incidential Ingestion										
Date:								5/1/06	3/30/16	5/1/06	3/30/16	5/1/06	3/30/16	5/1/06	3/30/16
TPH 8015															
TPH-DRO	mg/L	NE	NE	Ŋ	ŊĘ	NE	NE	ND	0.29	QN	0.13	ND	0.75	QN	<0.12
VOCs 8021B															
Benzene	T/Bn	941	941	1050	863	15	NE	QN	<1.0	QN	<1.0	ΔN	<1.0	QN	<1.0
Toluene	T/Bn	1920	8070	63100	35000	1020	0009	ND	<1.0	QN	<1.0	QN	<1.0	QN	<1.0
Ethylbenzene	T/Bn	27.6	27.6	3380	1410	19	2100	QN	<1.0	QN	<1.0	ΩN	<1.0	QN	<1.0
m,p-Xylenes	T/Bn	71.5	149	1330	5270	21.8	NE	QN	<2.0	QN	<2.0	ΩN	<2.0	QN	<2.0
o-Xylenes	T/6n	51.9	207	1830	2870	21.9	NE	QN	<1.0	ND	<1.0	ΔN	<1.0	QN	<1.0
Total Xylenes	T/6n	492	2070	5940	11100	87.4	NE	ND	<2.0	QN	<2.0	ΔN	<2.0	ND	<2.0
Naphthalene	ng/L	3.98	20.1	73.5	222	0.722	NE	QN	4.9	QN	<1.0	QN	4.3	QN	<1.0
NOTES.															ı

NOTES:
The tall perform hydrocarbons
TPH-LRO = diesel range TPH
TPH-GRO = gasoline range TPH
VOSE = vollatile organic compounds
UGL = milligrams per liter
VOSE = vollatile organic compounds
ugl. = milligrams per liter
VOSE = vollatile organic compounds
ugl. = milligrams per liter
VOSE = vollatile organic compounds
vollatile vollatile organic compound value screening level
VOSE-VOXT = VOSE Organic range organic conformation and construction worker in a trench
VOSE-VOXT = VOSE contacted
VOSE-VOXT = vollatile organic quality standards for contaminants of concern for other surface waters
VOSE-VOXT = vollatile contacted
VOSE-VOXT = vollatile c

TABLE 7C. ICOR 2016 GROUNDWATER ANALYTICAL RESULTS (DETECTIONS ONLY) FORMER ROBINSON TERMINAL NORTH SOU AND SO IN NORTH INNONS STREET ALCOURTRY, VA.

MD-0		2/7/17	0.14	70:0	NA	NA	-	9	13	:1.0	¢ ¢ ¢	41.0 41.0	1.0	-10	42	0.17	4.0	2.0	1.1		-5.0	5.0	0.50	1.7	0.94	<0.50	6.0	200	.0.50	2.5	4.3	55.0	<0.50		¥	¥		NA	NA NA		:5.0	12	61	1.0	29	4.9	9,5	10	13000	
MiHpt-20-GV		9/21/16	0.18	21.0	NA	NA			14			4.0	41.0	<10	29	0.15	0.7	0.00	1.4		<5.0			6.3	<5.0		-20 -20 -20	+	<5.0	12	13	0.65			QN	QN			000		<5.0	13	7.4	<1.0	12	2.0	5.0	×10	8600	
15-GW		2/7/17	<0.1	20.10	NA	NA	017	×10	6.2		<10	<1.0 <1.0	4.0	<10	1.1	0.15	×1.0	0.00	<1.0		<5.0	<5.0	0.00	<0.50	<0.50	<0.50	<5.0	050	<0.50	09'0>	1.7	050	<0.50		NA NA	N		NA:	NA NA		61	4600	3.4	<1.0	36	<1.0	6.4	2.6	1800	
MiHpt-15-GV		9/21/16	<0.1	0.00	NA	NA	-40	210	6.6	ll	40	410 410	4.0	<10	<1.0	0.10	410	0.00	<1.0		<5.0	<5.0	0.0	<5.0	<5.0	<5.0	5.0	250	<5.0	<5.0	<5.0	0.60	<5.0	400	QN	ND		<0.19	710		<5.0	200	13	<1.0	12	<1.0	4,6	210	3800	
GW(25-28.5)		8/16											5.7																																					
MiHpt-14-		ă	0.1	0	<2.4	<2.4	70	40	410	<1.0	<10	0.10	9	<10	410	0.07	207	000		П	<5.0	<5.0	0.0	0.65 0.65	<5.0	<5.0	\$ \$20 \$ \$20	200	<5.0	<5.0	<5.0	0.00			NA	QN		NA	NA NA	100	NA	NA NA	¥ X				NA	NA NA	VΑ	
ot-14-GW		2/7/17	0.41	71	NA	NA	40	9 9	70	1.3	<10	4.0	900	<10	48	0.15	0,0	4.5	7.4		<5.0	200	C2:0	8.5	<0.50	2.4	25.0	9	1.9	9.6	8.8	C5.U	1.3	***	NA A	AA		W.	¥ ¥	É	<5.0	19	*	<1.0	250	1.4	40 45	410	15000	
H		9/21/16	0.33	0.00	NA	NA	410	×10		1.4	<10	5.4	40	<10	37	0.T.>	2.0	1	4.8		<5.0	13	25.0	12	<5.0	6.3	<5.0	13	<5.0	18	10	CP:0	<5.0	-	QN	NA		4.4	0061>	200	<5.0	12	24	<1.0	1200	<1.0	9 0	210	16000	
0-GW(25-28.5)		9/9/16	33.0	00.0				38	1.3						7.5																																			
S) Mithpt-1			40.1		<2.4	<2.4	770	Т		<1.0	<10	0.15	400	<10	4	0.7	0.0	0.00	0.1>		<5.0	<5.0	0.00	<5.0		<5.0	<5.0 45.0	<5.0	<5.0	<5.0	<5.0		<5.0	***	V.	AN		V.	A A		ΑΝ	d s	ξ×	ΑN	NA	ΑN	AN N	Ç Y	W	
t-08-GW(37-40		9/6/16	97	***			100	9	,															8.4								8																		
d H		17	c0.1	1	<2.2	<2.2	1		<1.0	<1.0	<10	0.07	41.0	<10	14 <1.0	0.0	0.0	0.00	<1.0		<6.3	<6.3	50.3	1.6		<6.3	66.3	eg3	Г	0.51 <6.3	2.2 <6.3	99.7	<6.3		AA	NA		AN	A A		NA	3.7 NA	Ş X	1.4 NA	2.6 NA		A S	S AN	22 NA	
MHpt-08-GW		16 277	40.1		NA	NA	0,7	210	41.0	<1.0	<10	0.15	0.15	<10	14	0.10	0.15	0.20	<1.0		<5.0	\$20 2.0	0.65			<0.50	\$ \$50 \$ \$50	25.0		0.		0.65	<0.50		NA	Ϋ́		NA.	A A		<5.0	200	0.12				0.0	0.12		
		9/21/	<0.1	ļ	NA	NA	047	210	4	<1.0		13 <10	6 < 1.0	<10	0	0.07	T	30 02			<5.3	5.3	200	38 <5.3	2 <5.3		553	253	<5.3	5 <5.3		200		-	Q	QN		612	<130 <1800		<5.0	4	0.12	c1.0	12 5.		-	010	-	
Mirript-07-6W		2/7/17:	980	ļ	NA	ΝΑ	ç	200	3	<1.0	×10			<10	72	0.12	0.10		L		<5.0	0.5°	0.0			1.6	7 097	×20	<0.50	9.5		0.6	<0.50		Ā	ž		NA:	A A		<5.0	2,007	0.12				0.0	210	1	
		9/21/16	0.88		NA	NA	0,7	200	25	<1.0	×10	19		<10	830	0.15	2.0	Г			<5.0	C-5:0		36	<5.0	<5.0	25.0	0.50	<5.0	8.2		0.00	<5.0	411	QN	Q		61.0	<190	2	<5.0	7.5	×1.0		5.6	ŀ	0.10	Т	69	
Mirript-05-GW		2/7/17	0.79	*	NA	NA	-40	200	150	<1.0	40	4.4	<1.0	<10	250	0.15	24.0	6	38		<5.0	<5.0	0.00	1.0	_	<0.50	\$50 \$50	250	<0.50	1.1	47	0.00	<0.50		W	×		N.	A A		°20		130			480	2100	240	43000	
Ĭ.		9/21/16	0.81	20.0	NA	NA	740	240	110	<1.0	<10	45		<10	170	0.15	44.0	12	23		<5.3	5.3	200	<5.3	<5.3	<5.3	563	<53	<5.3	<5.3	83	9 9	<5.3	400	QN	QN		61.0	<190	201	<5.0	220	52	870	14000	260	2000	43	35000	
ECS-MW4		2/7/17	1.0	0.10	NA	NA	70	40	<1.0	<1.0	<10	61.0	4.7	<10	¢1.0	0.0	210	0.00	<1.0		<5.0	<5.0	0.00	2.5		<0.50	<5.0	<5.0	<0.50	0.75	<0.50	0.50	<0.50		W	NA		NA	NA NA	100	<5.0	72	0.15	<1.0	<1.0	<1.0	0.0	410	420	
<u> </u>		9/21/16	1,0	01.00	NA	NA	40	40	4.0	<1.0	40	010	3.7	<10	4.0	0.0	200	000	<1.0		<5.0	65.0	0.00	200	<5.0	<5.0	200	×5.0	<5.0	<5.0	<5.0	0.00	<5.0	400	QN	QN		40.19	61.05	201	<5.0	6.6	4.0	<1.0	<1.0	<1.0	0.0	410	<20	
EC-MW4		2/7/17	<0.1	25.0	NA	NA	9	9	41.0	<1.0	<10	0.0	970	<10	<1.0	0.0	410	000	<1.0					<0.50											NA	NA		NA	NA NA		<5.0	8.0	010	6.4	- 11	2100	3.8	210	87	
9		9/21/16	<0.1	0.50		NA			41.0				4.0	<10		40		0.00						<5.0							<5.0		<5.0		MD	ND			<0.19		<5.0	2.3	410		<1.0	28	7.0		<20	
IW2		27717	<0.1	2		NA			410				2.8	<10			210							<0.50											NA	T Y			NA NA		<5.0	8.5	410	1.1	Ĥ		2.0		250	1
TEC-MWZ		9/21/16	0.1	170	NA N	- A			410				2.5	> 01:	1.0	0.00	10	000			NA A	Y.	W.	v v	, A	, VI	W.		Α,	, A	ď.	4	×.		AA A	A		A.	4		, Al	4	į «	4	Y.	N.	NA		Y.	
WTC Inhalation			N N	NE.	Г	NE		14100	15		3420 <		651	v	0.722	4030	0.484	ı	> 21.9		_	W I	y y	N N	NE	NE P	1.23 NE	NE N	NE	NE	0.722	962000 NE	NE					7	N N		E E	N N	NE NE	NE	NE N	E E		Т	NE	
VDEQ-CWT WTC Dermal Contact &	Incidential Ingestion		N N	2	NE	NE	4330000	754000	863	1720	¥	0141	1690000	NE	557	25000	25000	6270	5870		8330	1130	/350	2870	1590	7660	1160	51.2	330	4250	4	_	941		I			W.	Z Z		Ä	W 12	36	26.6	24600	Ä	4750	24.6	220000	
WTNC			2 2	2	NE	NE	+	+	+	Н	4	+	+		73.5	+	+	1330	1830		Ä	W L	N N	ž	NE	NE	1800	N N	Ä	NE	73.5	1240000000	Ä					W I	u u		Ä	¥ 2	ž Z	NE	NE	Ä	W U	Į.	Ä	
VDEQ-			B E	Į.	NE	NE	+	+	+	Н	+	+	+	Н	20.1	24.7	9070	149	207		Ä	2	2	¥	NE	NE	13.9 NE	NE NE	NE	NE		-	R					¥ :	¥ ¥		R	2	2 2	NE	NE	Ä	¥ 4	Į.	NE	
VDEQ- T3RGSL		-	NE NE	2	NE	NE	+	$^{+}$	941	Н	Ŧ	+	t	Н	3.98	+	+	ļ	-	H	R	2	2 1	Z W	NE	NE	3.34	N N	NE.	NE	3.98	9200000	N.					W.	+	ŀ	4	+	y W	L		_	¥ 2	+	ł	l
cAS No.			C6C10GRC	CIOCAGO		TPH1664				ll					91-20-3			1	1		95-95-4			83-32-9			92-52-4					87-86-5	129-00-0	H	1			93-72-1	1918-00-9	4			7440-43-9	1	ll		7440-02-0	7440-28-0	7440-66-6	
Units			mg/L	T. B.		mg/L	lea	No.	ng/L	J/Gn	Ug/L	100	US/L	ng/L	ug/L	Ton.	non non	loi l	Joh		J/Gn	J/6n	di i	na/L	Ug/L	n8/L	T/Sn	100	John	J/6n	J/6n	9	John		Ug/L	UQ/L		ug/L	ng/L	1	J/Gn	Jon J	UQ/L	1/6n	J/6n	Ug/L	Jen .	No.	nov!	
			-C10)	O-Coo)	& Grease (Total Recovered)		808	EN)				90	ther	cane		eue				270C	phenol	enol	No.	larene	9.		nenyl)					oue			118		51A	(%)		20A										NOTES:
Sample ID:		ample Date:	TPH-GRO (C6-C10)	PH 1664	Oll & Grease (1	TPH	CL VOCs 8260E	-coulanone (m	enzene	Chloroform	Syclohexane	ensymberizene ensymptifikenzene	Methy-t-buty ether	dethylcyclohex	Japhthalene	etrachioroeme	oluerie richloroalhan	Di Xylenes	-Xylene	CL SVOCs 8270C	.4.5-Trichlorophenol	4-Dichloroph	Chlorophenol	-meurymaprin	cenaphthylene	nthracene	iphenyl (Diphe	ibenzofuran	luoranthene	luorene	laphthalene	rentachlorophenol	yrene	CBs 8082	CBs Pesticides 8081B	esticides esticides	ferbicides 8151A	,4,5-TP (Silvex)	ACPP	PL Metals 6020A	ntimony	rsenic	Sadmium	Chromium	Sopper	pea.	dickel	hallism	uc	OTES:

TABLE 7C. ICOR 2016 GROUNDWATER AMALYTICAL RESULTS (DETECTIONS ONLY) FORMER ROBINGON TERMINAL NORTH SON AND SYN NORTH MINNES TREET ALCANDRIC, VA.

Sample ID:	Unite	CAS No	VDFO.		^	VDFO-CWT		MiHo	MiHot-21-GW	MiHot-21-GW(25-28.5)	MiHot	MiHot-22-GW	MiHot-22-GW(25-28.5)
			T3RGSL	T3CGSL	WINC	WTC	TC.						
						Dermal Contact & Incidential	Inhalation						
						Ingestion							
Sample Date:								9/21/16	27/17	9/9/16	9/21/16	2/7/17	9/8/16
TPH 8015		CHOOLOGO	-114	LIA	Ļ	-	-		,		0		* 4*
IFRIGING (CB-C10)	18	Ceciloero	2 2	2	y :	2	ž į	0.7	2 5	т	0.30	6.40	100
TPH 1664	16	CIOCEGONO	a.	į	2	Z.	Į.	2	7	Т	77.0	6.19	01.0
Oil & Grease (Total Recovered)	l/ou	OG TR	N	N	WZ.	NE	N.	NA	NA	633	NA	NA	200
НД	l/om	TPH1664	±N.	ΨN	LL Z	H.V	H.V	NA	νv	03	VV	VN	00
TCI VOCs 8260B													
2-Butanone (MFK)	lou	78-93-3	224000	941000	6260000	1330000	1660	<50	<100	<10	<10	<10	<10
Acologo (mary)	100	27 64 4	2020000	4400000	2450000	254000	44400	200	900	240	200	-40	200
Position	100	74 45 5	2000000	1900000	24200000	0000	2014	000	2017	200	000	000	017
Deliceire	100	7.00.10	241	146	0000	4720	000	0 3/	740	0.7	0 0 10	000	0.17
CIRCIONI	1,60	07,000,3	61.3	0.00	2200	07.1	0.77	Ш	OI V	017	ı	015	0.5
Cyclonexane	Jen .	110-82-/	Z01	429	9/80	J.	3420	090	0L/	410	2 :	OL»	OL»
Emyloenzene	100	100-41-4	27.6	977	3380	1410	190	OCT.	09L	0.17	9.	۹,	0.12
IsopropyiDenzene	J.Gn	8-28-96	/88./	373	3450	6400	92.5	П	2		0.15	ш	u.rs
Metnyl-t-butyl etner	ng/L	T634-04-4	4200	19/00	443000	1690000	169	0.65	OL>	6.0	0.0	0.0	4.8
Methylcyclohexane	ng/L	108-87-2	17.7	74.5	650	NE	624	460	069	c10	40	<10	<10
Naphthalene	J.Gn	91-20-3	3.98	20.1	73.5	227	0.722	6.4	01>	41.0	0.15	3.1	41.0
Tetrachloroethene	J.Gn	127-18-4	5.76	24.2	292	213	10.6	47	64	41.0	o'1.0	0.1>	<1.0
Toluene	J/Gn	108-88-3	1920	8070	63100	35000	1020	45	44	<7.0	<1.0	3.5	<1.0
Trichloroethene	ng/L	79-01-6	1.24	2.18	19.3	52.7	0.484	10	11	<1.0	0.10	0.1>	c4.0
m,p-Xylenes	J.Gn	108-38-3	71.5	149	1330	5270	21.8	061	240	<2.0	62.0	0.25	62.0
p-Xylene	- Go	95-47-6	8.16	707	1830	28/0	87.72	9.1	11	<1.0	0.1>	8.4	21.0
TCL SVOCs 8270C			-		-		-						
2,4,5-Trichlorophenol	J/Gn	95-95-4	NE	NE	W.	8330	E S	23	49	<5.0	<5.0	<5.0	<5.0
2,4-Dichlorophenol	J/6n	120-83-2	NE	NE	W.	1130	NE.	710		<5.0	€5.0	€5.0	1.8
2-Chlorophenol	J/6n	95-57-8	NE	NE	WZ.	7350	E E	8.3	<5.0	<5.0	€5.0	<5.0	<5.0
Z-Methylnaphthalene	J.Gn	91-2/-6	ä	ä	ž.	61.5	Ľ.	C5.U	<0.50	45.0	0.0	09:05	<5.0
Acenaphthene	Jen .	63-32-9	S.	S S	ž :	0/87	Z :	20.0	40.50	50.0 50.0	45.0	00.00	0.05
-Cellapiniyerie	J.M	0-00-007	ž :	2	ž :	1330	2	20.0	0.00	200	000	0.00	00
Authoratie	To See	120-12-7	NE.	NE.	NE COOL	1,000	No.	23.0	20.30	000	200	20.30	0.00
Bipmentyl (Lipmentyl)	ng i	6-7C-76	3.51	13.8	0001	1100	1.25	200	25.0	0.00	0.00	0.00	0.00
Calibazole	160	000000	ž į	ž į	ž	NE C	ğ	20.0	0.00	007	0.00	000	0.0
Dipenzoruran	ng.	132-04-9	2 17	a c	2 2	2.10	2	20.0	0.00	0.65	0.00	0000	CD.0
rincialities	100	0-44-007	ž i	ž į	ų į	330	Т	0.07	20.30	000	0.00	00.05	0.00
Flucture	J. On	00-13-1	NE S		NE TO E	4230	T			000	0.00	0000	0.00
Naprinalene	100	91-20-3	3.90	2000000	13.5	22/	277000	6	000	000	200	20.30	200
Pentachiorognenoi	100	0.00-70	0000000		12400000000	103	302000	ı	20.00	000	200	200	200
Friendringene	ng.	420.00.0	ii ii	Z C	<u> </u>	1430	N I	20.0	20.50	0.65	0.00	00.00	20.0
Pyrene	J.Gn	0-00-671	NE	NE	NE NE	L de	NE.	0.05	40.5U	0.05	0.05	00.05	0.62
PCBS 8082	9-00							0.4	914	***	414	***	*13
PCDS Pacificides 8081B	100							9	V.	W	Q.	YK.	NA
Daeficidae	livi.							CN	ΨN	d Z	GN	V.V	42
Herbicides 8151A	1											100	
2.4.5-TP (Silvex)	na/L	93-72-1	NE	NE	NA NA	NE	NE	<19	NA	NA	9.1>	NA	NA
Dicamba	no/L	1918-00-9	¥	¥	¥	N.	Ä	23	ΝA	¥Z.	419	NA	NA
WCPP	no/L	93-65-2	N	NE	¥	NE	R	82000	ΝA	e Z	<1900	NA	NA
PPL Metals 6020A	L												
Antimony	ng/L	7440-36-0	NE	NE	W.	NE.	NE	<5.0	<5.0	NA	<5.0	<5.0	NA
Arsenic	ug/L	7440-38-2	NE	NE	NE	NE	NE	290	330	NA	180	230	NA
Beryllium	ngıl	7440-41-7	NE	PE	W.	PE	NE	<1.0	<1.0	NA	<1.0	<1.0	NA
Cadmium	ng/L	7440-43-9	NE	NE	Ä	36	N.	<1.0	<1.0	NA	<1.0	<1.0	NA
Chromium	J/Gn	7440-47-3	NE	NE	J.	26.6	N.	410	41.0	NA	6.	<1.0	NA
Copper	ng/L	/440-50-8	ij.	ä	Z :	24600	Ľ.	1.4		NA	2.4	0.0	ž
Lead	J.Gn	7440 00 0	NE NE	N N	W L	NE	N N	c1.0	0.12	NA	97.	21.0	NA
Nickel	100	7702 40 2	<u> </u>	2 2	U U	4/30	ž ž	3.3	0.0	AN ON	710	0.0	NA.
Thellium	100	7440,28,0	Į ų	2 12	<u> </u>	246	Į.	c10	24.0	42	210	210	VA.
Insilium	non.	7440 55 0	1 10	Į U	1 12	220000	Į Į	0.17	ç	NA NA	0.17	200	NA.
2110	180	244040			-	****		220	2	WW	-	250	104

2 of 2

List of Symbols, Abbreviations, and Acronyms

Symbol or Abbreviation Definition

CVOC

DPT

ECD

DNAPL

HPT

LCSM

LIF

LNAPL

MIP

CSM Conceptual Site Model. A CSM is a method to describe what is known or can be inferred about a site for the purpose of making a decision. A CSM generally will address physical, chemical and biological systems; contaminant release and transport; societal issues; policy, land use, and exposures.

Chlorinated Volatile Organic Contaminant. A **VOC** containing chlorine atoms; typically, a cleaning solvent.

Direct-Push Technology (DPT) refers to a group of techniques used for subsurface investigation by driving, pushing and/or vibrating small-diameter rods into the ground.

Electron Capture Detector. An **ECD** is a device for detecting electron-absorbing components (high electronegativity) such as halogenated compounds in a gas through the attachment of electrons via electron capture ionization.

Dense Non-Aqueous Phase Liquid. A **DNAPL** is a denser-thanwater NAPL, i.e. a liquid that is both denser than water and is immiscible in or does not dissolve in water.

Hydraulic Profiling Tool. The **HPT** is a logging **tool** that measures the pressure required to inject a flow of water into the soil as the probe is advanced into the subsurface. In addition to measurement of injection pressure, the HPT can also be used to measure hydrostatic pressure under the zero-flow condition.

LNAPL Conceptual Site Model. A **LCSM** is a conceptual site model focused on the release and transport of LNAPL contaminants.

Laser-induced fluorescence is a spectroscopic method in which an atom or molecule is excited to a higher energy level by the absorption of laser light followed by spontaneous emission of light.

Light Non-Aqueous Phase Liquids are groundwater contaminants that are not soluble in water and have lower density than water, in contrast to a **DNAPL** which has higher density than water.

Membrane Interface Probe. The **MIP** is a direct push tool used to log the relative concentration of volatile organic compounds (VOCs) with depth in ...

soil.

Symbol or Abbreviation Definition

PHC Petroleum Hydrocarbons. The presence of petroleum hydrocarbon

fuels in any phase. (PHC).

PID Photo Ionization Detector. In a PID high-energy photons to

break molecules into positively charged ions. The ${\bf PID}$ will only respond to components that have ionization energies at or below the energy of the

photons produced by the PID lamp.

SPOC Shock Protected Optical Cavity. The SPOC is the component of the LIF

system that contains the mirror and sapphire window for proper alignment

of the laser beam.

TCE Trichloroethylene. The chemical compound TCE is a halocarbon

commonly used as an industrial solvent. It is a clear non-flammable liquid

with a sweet smell.

UST Underground Storage Tank. Under Federal law UST means any one or

combination of tanks including connected underground pipes that is used to contain regulated substances, and the volume of which including the volume of underground pipes is 10 percent or more beneath the surface of the ground. This does not include, among other things, any farm or residential tank of 1,100 gallons or less capacity used for storing motor

fuel for noncommercial purposes, tanks for storing heating oil for

consumption on the premises, or septic tanks.

UVOST® Ultraviolet Optical Scanning Tool®. A LIF is a tool that uses laser light

in the ultraviolet spectrum to excite fluorescent molecules that exist in the majority of hazardous non-aqueous phase liquids (NAPLs) such as

petroleum fuels/oils, coal tars, and creosotes.

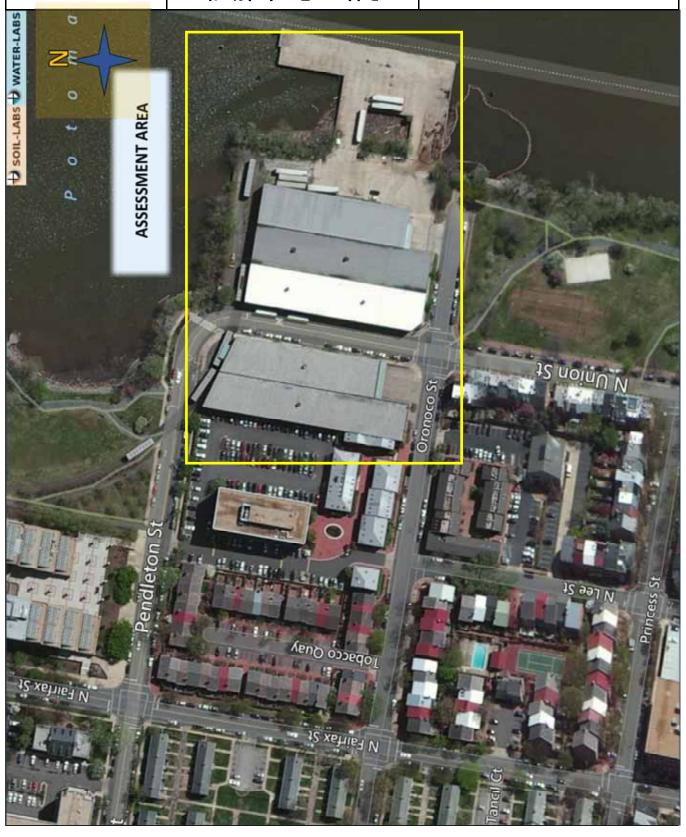
VOC Volatile organic compounds (VOCs) are organic chemicals that have a

high vapor pressure at ordinary room temperature. Their high vapor pressure results from a low boiling point, which causes large numbers of molecules to evaporate or sublimate from the liquid or solid form of the compound and enter the surrounding air, a trait known as volatility.

XSD Halogen Specific Detector. The XSD was developed for the selective

detection of halogen-containing compounds.

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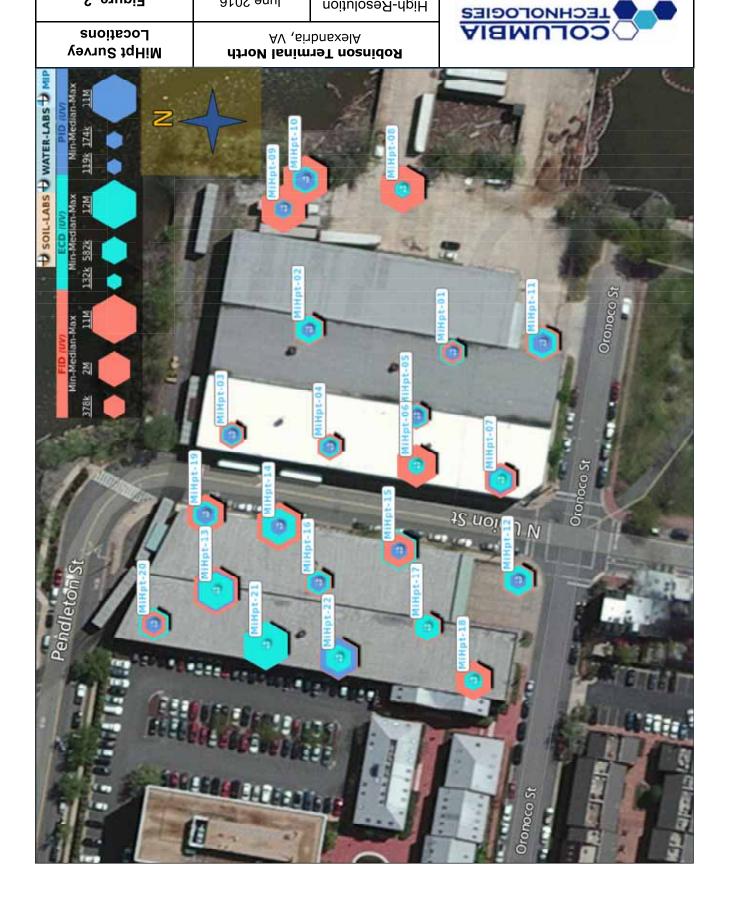
Assessment Area

Robinson Terminal North Alexandria, VA

Figure 1 June 2016

Assessment High-Resolution

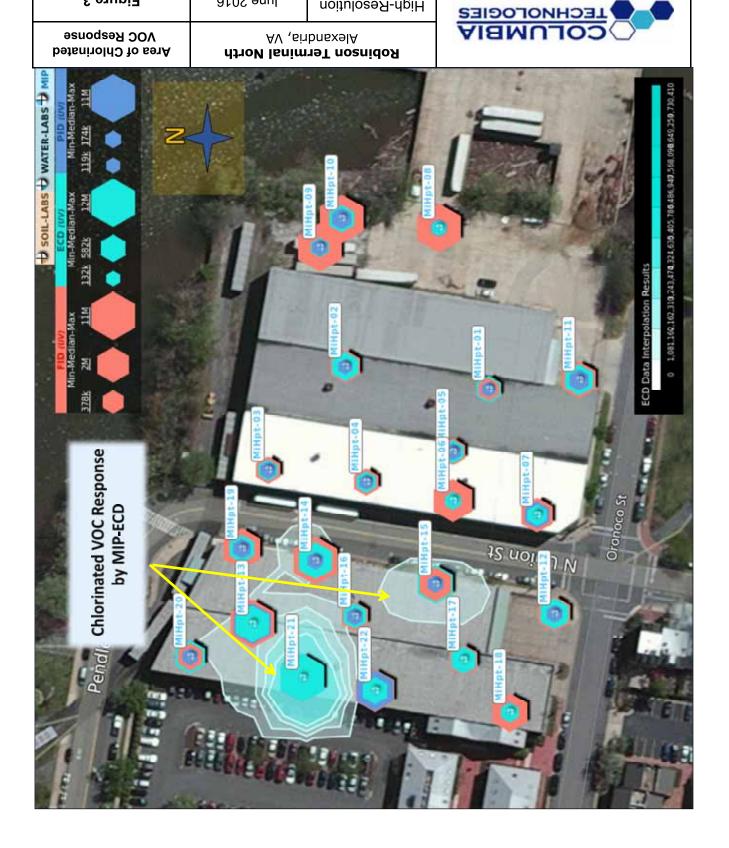




Assessment

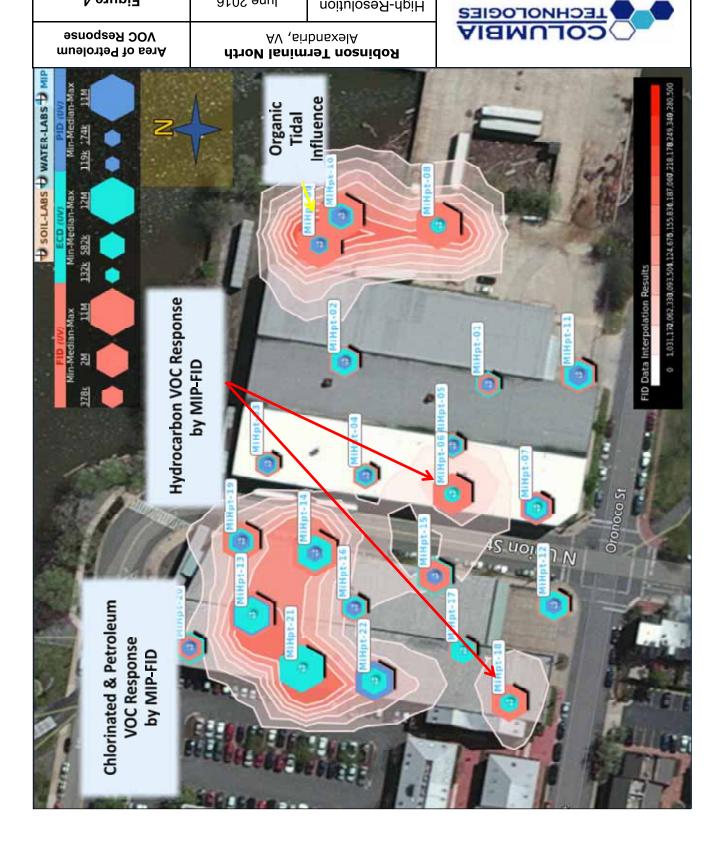
High-Resolution

June 2016



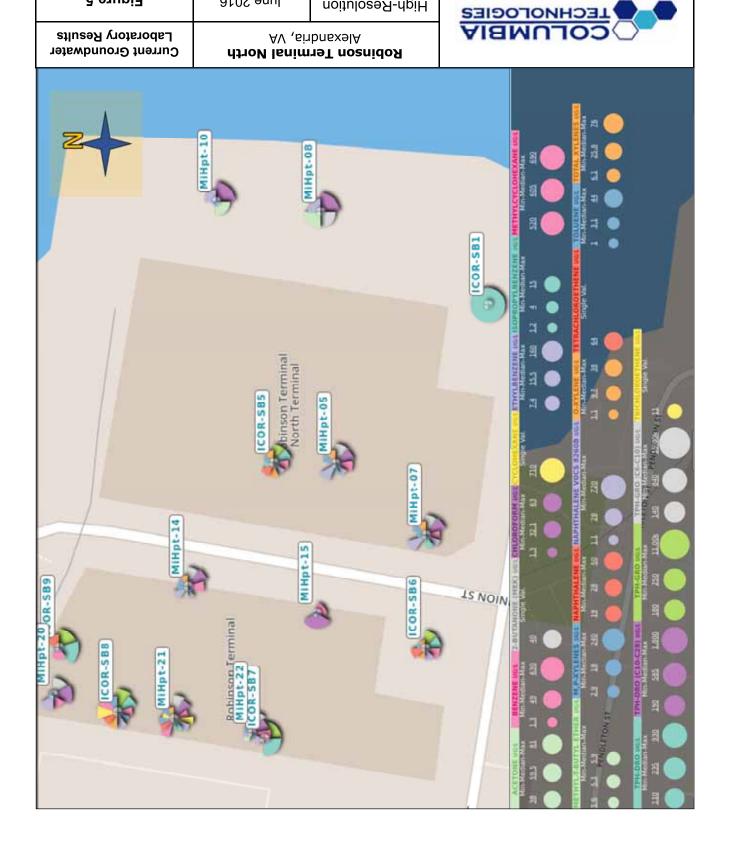
High-Resolution

June 2016



High-Resolution

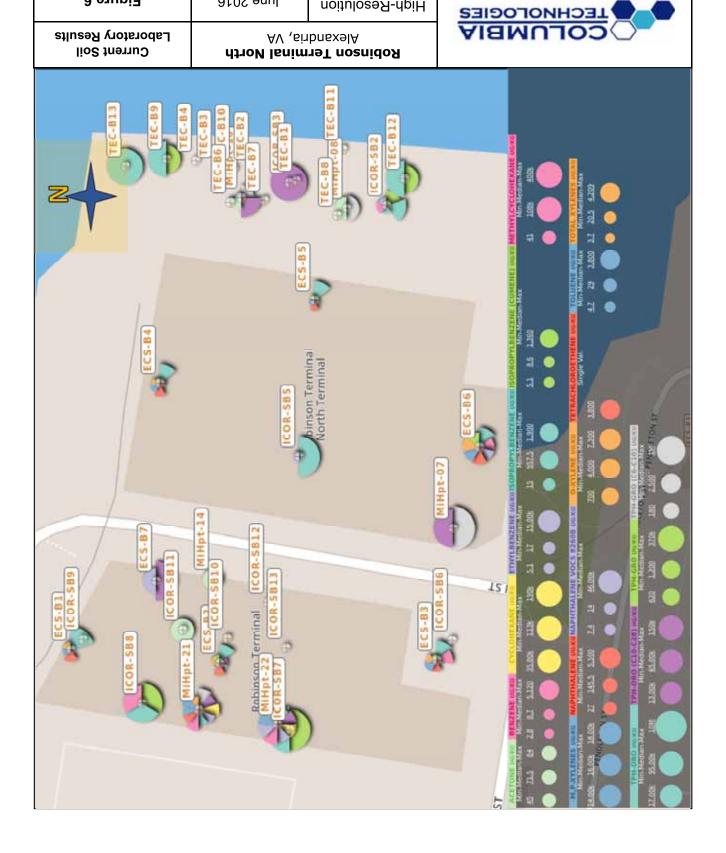
June 2016



Assessment

High-Resolution

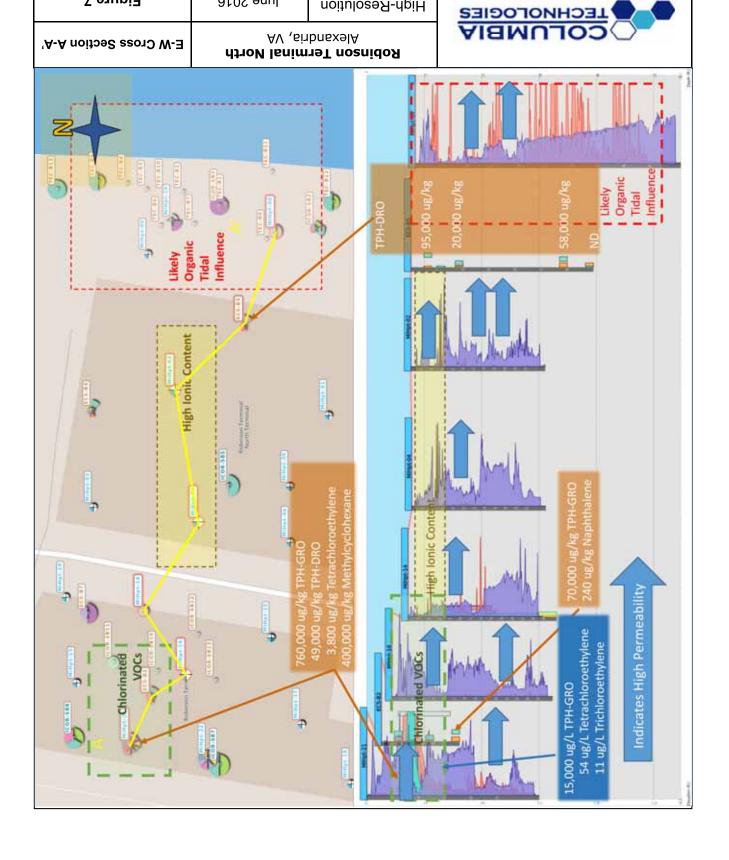
June 2016



Assessment

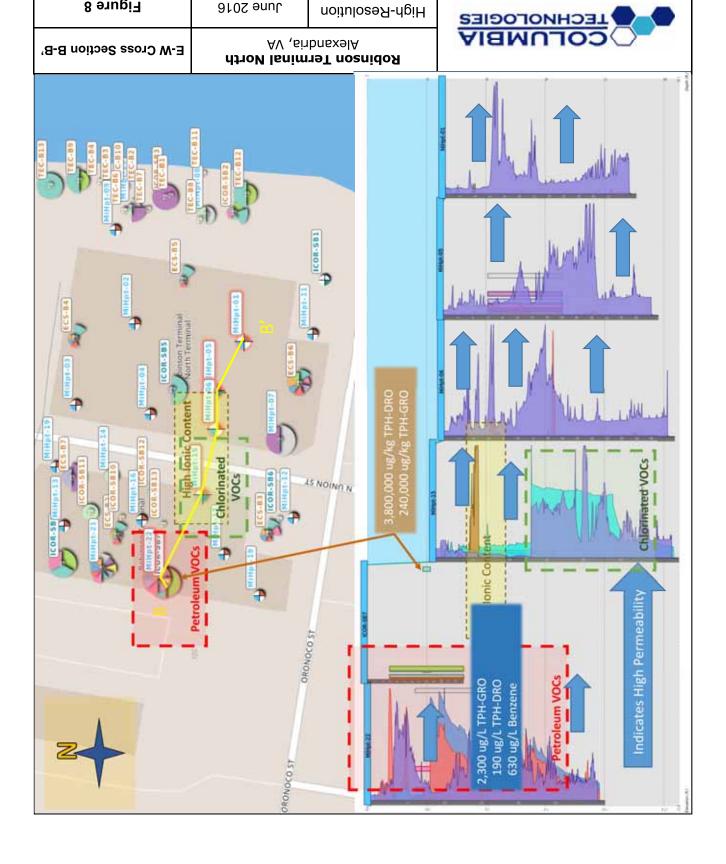
High-Resolution

June 2016



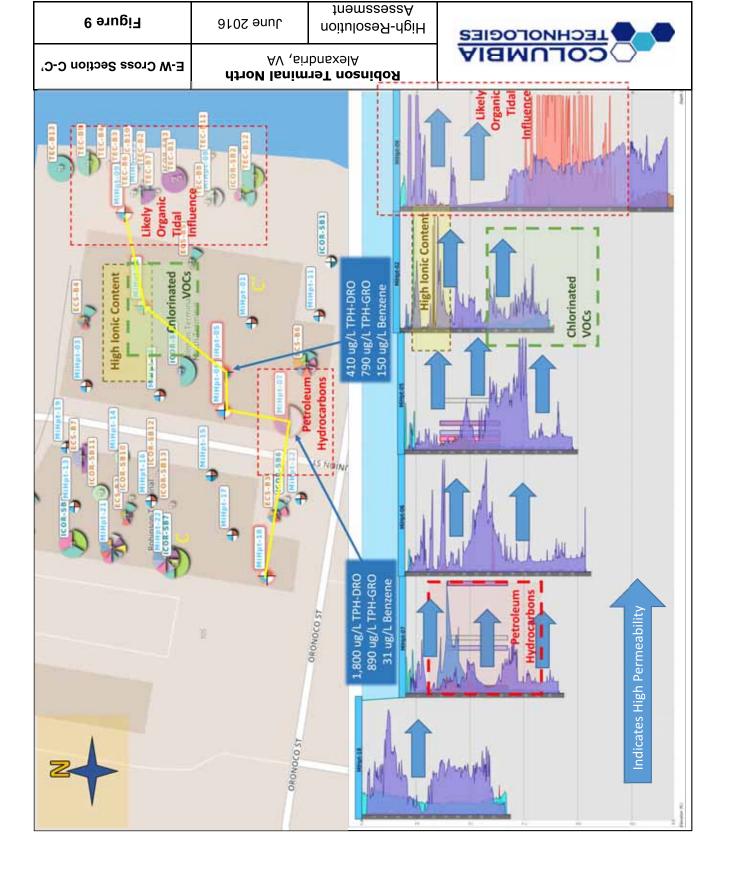
High-Resolution

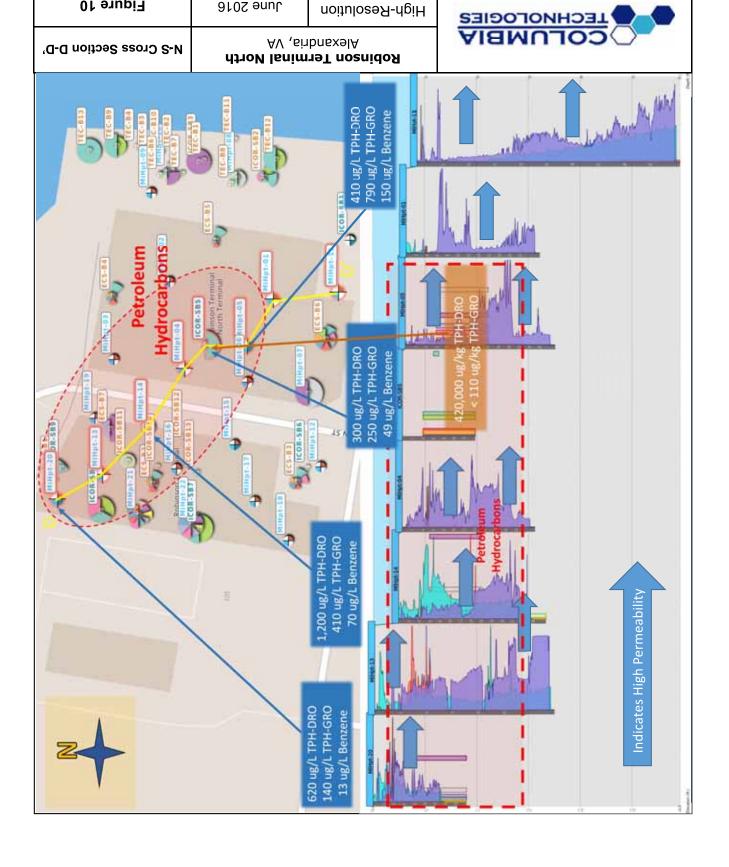
June 2016



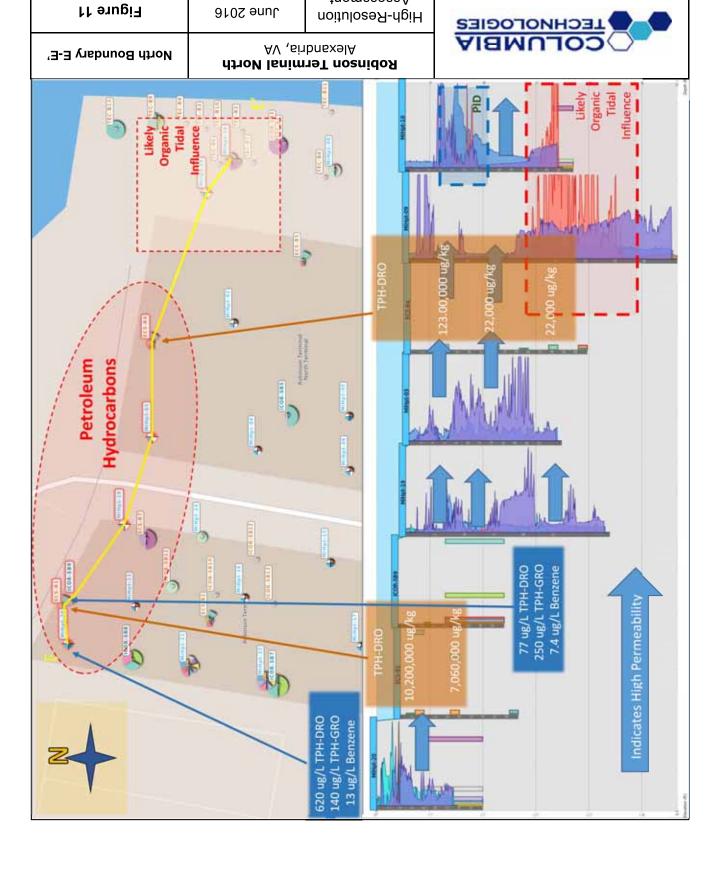
JnəmssəssA

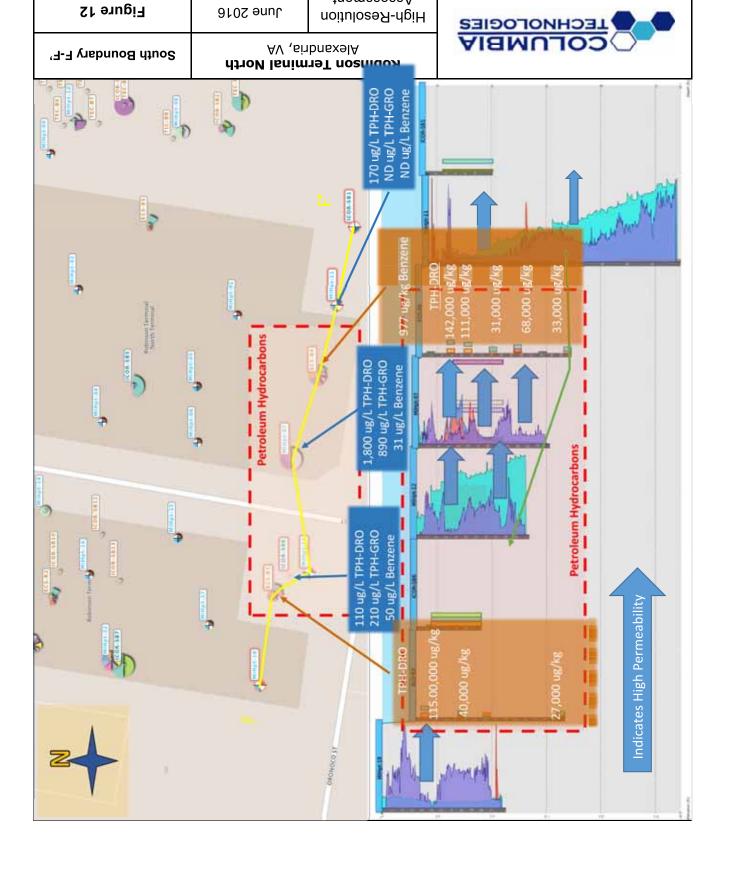
June 2016

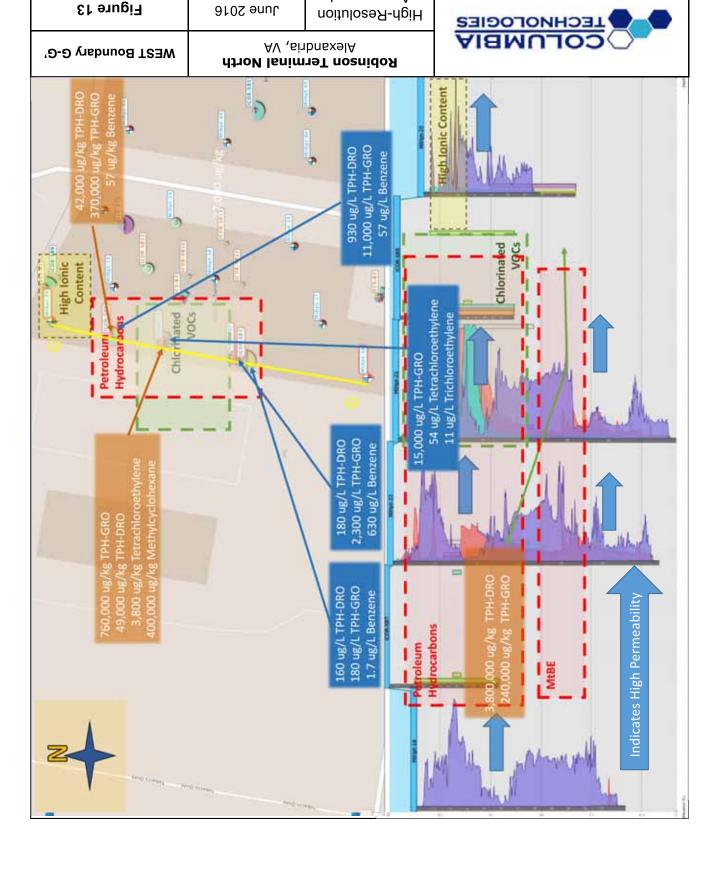




June 2016







ATTACHMENT 5 LABORATORY REPORTS OF ANALYSIS (2016 AND 2017 SAMPLES)

Analytical Report for

Icor Ltd.

Certificate of Analysis No.: 16090718

Project Manager: Mike Bruzzesi

Project Name: Robinson Terminal North Project Location: 500/501 N. Union St.



September 14, 2016
Phase Separation Science, Inc.
6630 Baltimore National Pike
Baltimore, MD 21228
Phone: (410) 747-8770

Fax: (410) 788-8723

OFFICES: 6630 BALTIMORE NATIONAL PIKE ROUTE 40 WEST BALTIMORE, MD 21228 410-747-8770 800-932-9047 FAX 410-788-8723

PHASE SEPARATION SCIENCE, INC.



September 14, 2016

Mike Bruzzesi Icor Ltd. PO Box 406 Middleburg, VA 20118

Reference: PSS Work Order(s) No: 16090718

Project Name: Robinson Terminal North Project Location: 500/501 N. Union St.

Dear Mike Bruzzesi:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Work Order(s) numbered 16090718.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on October 12, 2016, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

Dan PrucnalLaboratory Manager



Sample Summary

Client Name: Icor Ltd.

Project Name: Robinson Terminal North

Work Order Number(s): 16090718

The following samples were received under chain of custody by Phase Separation Science (PSS) on 09/07/2016 at 01:35 pm

Lab Sample Id	Sample Id	Matrix	Date/Time Collected	
16090718-001	M1Hpt-03(1-2)	SOIL	09/06/16 15:45	
16090718-002	M1Hpt-03(4-5)	SOIL	09/06/16 15:50	
16090718-003	M1Hpt-04(1-2)	SOIL	09/06/16 16:00	
16090718-004	M1Hpt-04(4-5)	SOIL	09/06/16 16:05	
16090718-005	M1Hpt-06(1-2)	SOIL	09/06/16 15:15	
16090718-006	M1Hpt-06(4-5)	SOIL	09/06/16 15:20	
16090718-007	M1Hpt-07(1-2)	SOIL	09/06/16 14:05	
16090718-008	M1Hpt-07(7-8)	SOIL	09/06/16 14:15	
16090718-009	M1Hpt-08(4-5)	SOIL	09/06/16 10:55	
16090718-010	M1Hpt-08(37.8-38.8)	SOIL	09/06/16 12:05	
16090718-011	M1Hpt-10(24.5-25.5)	SOIL	09/06/16 10:10	
16090718-012	M1Hpt-08-GW(37-40)	GROUND WATER	09/06/16 13:30	

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes

- 1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
- 2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
- 3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
- 4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminates, and part 141.3, for the secondary drinking water contaminates.
- 5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
- 6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
- 7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
- 8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

- B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- C Results Pending Final Confirmation.
- E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- Fail The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
- J The target analyte was positively identified below the reporting limit but greater than the MDL.
- MDL This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is an estimate of the minimum amount of a substance that an analytical process can reliably detect. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific.
- ND Not Detected at or above the reporting limit.
- RL PSS Reporting Limit.
- U Not detected.



Sample Summary

Client Name: Icor Ltd.

Project Name: Robinson Terminal North

Work Order Number(s): 16090718

Certifications:

NELAP Certifications: PA 68-03330, VA 460156 State Certifications: MD 179, WV 303

Regulated Soil Permit: P330-12-00268 NSWC USCG Accepted Laboratory LDBE MWAA LD1997-0041-2015

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090718

Icor Ltd., Middleburg, VA

September 14, 2016

Sample ID: M1Hpt-03(1-2)			e Sampled:			PSS Sample	e ID: 1609071	8-001
Matrix: SOIL	l	Date/Time	e Received:	09/07/2	2016 13:35	% S	olids: 92	
PP Metals	Analytica	I Method:	SW-846 6020	Α	F	Preparation Meth	nod: 3050B	
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Antimony	ND	mg/kg	2.6		1	09/08/16	09/09/16 19:0	7 1033
Arsenic	1.1	mg/kg	0.52		1	09/08/16	09/09/16 19:0	7 1033
Beryllium	ND	mg/kg	2.6		1	09/08/16	09/09/16 19:0	7 1033
Cadmium	ND	mg/kg	2.6		1	09/08/16	09/09/16 19:0	7 1033
Chromium	5.5	mg/kg	2.6		1	09/08/16	09/09/16 19:0	7 1033
Copper	4.2	mg/kg	2.6		1	09/08/16	09/09/16 19:0	7 1033
Lead	22	mg/kg	2.6		1	09/08/16	09/09/16 19:0	7 1033
Mercury	ND	mg/kg	0.10		1	09/08/16	09/09/16 19:0	7 1033
Nickel	ND	mg/kg	2.6		1	09/08/16	09/09/16 19:0	7 1033
Selenium	ND	mg/kg	2.6		1	09/08/16	09/09/16 19:0	7 1033
Silver	ND	mg/kg	2.6		1	09/08/16	09/09/16 19:0	7 1033
Thallium	ND	mg/kg	2.1		1	09/08/16	09/09/16 19:0	7 1033
Zinc	ND	mg/kg	10		1	09/08/16	09/09/16 19:0	7 1033
Sample ID: M1Hpt-03(4-5)		Date/Tim	e Sampled:	09/06/2	2016 15:50	PSS Sample	e ID: 1609071	8-002
Matrix: SOIL	ı	Date/Time	e Received:	09/07/2	2016 13:35	% S	olids: 81	
Arsenic	Analytica	ıl Method:	SW-846 6020	Α	F	Preparation Meth	nod: 3050B	
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Arsenic	190	mg/kg	0.44		1	09/08/16	09/09/16 19:4	0 1033

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090718

Icor Ltd., Middleburg, VA

September 14, 2016

Sample ID: M1Hpt-04(1-2)			Sampled:			•	e ID: 1609071	8-003
Matrix: SOIL			Received:				folids: 91	
PP Metals	Analytica	al Method: S	SW-846 6020	Α	F	Preparation Meth	nod: 3050B	
_	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Antimony	ND	mg/kg	2.0		1	09/08/16	09/09/16 19:46	5 1033
Arsenic	3.9	mg/kg	0.41		1	09/08/16	09/09/16 19:46	5 1033
Beryllium	ND	mg/kg	2.0		1	09/08/16	09/09/16 19:46	5 1033
Cadmium	ND	mg/kg	2.0		1	09/08/16	09/09/16 19:46	5 1033
Chromium	4.0	mg/kg	2.0		1	09/08/16	09/09/16 19:46	5 1033
Copper	6.7	mg/kg	2.0		1	09/08/16	09/09/16 19:46	5 1033
Lead	94	mg/kg	2.0		1	09/08/16	09/09/16 19:46	5 1033
Mercury	0.094	mg/kg	0.082		1	09/08/16	09/09/16 19:46	5 1033
Nickel	ND	mg/kg	2.0		1	09/08/16	09/09/16 19:46	3 1033
Selenium	ND	mg/kg	2.0		1	09/08/16	09/09/16 19:46	3 1033
Silver	ND	mg/kg	2.0		1	09/08/16	09/09/16 19:46	5 1033
Thallium	ND	mg/kg	1.6		1	09/08/16	09/09/16 19:46	5 1033
Zinc	16	mg/kg	8.2		1	09/08/16	09/09/16 19:46	5 1033
Sample ID: M1Hpt-04(4-5)		Date/Time	Sampled:	09/06/2	2016 16:05	PSS Sample	e ID: 1609071	8-004
Matrix: SOIL	I	Date/Time	Received:	09/07/2	2016 13:35	% S	olids: 82	
Arsenic	Analytica	al Method: S	SW-846 6020	Α	F	Preparation Meth	nod: 3050B	
_	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Arsenic	320	mg/kg	4.1		10	09/08/16	09/12/16 14:2	1 1033

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09/08/16 09/09/16 20:26 1033

CERTIFICATE OF ANALYSIS

No: 16090718

Icor Ltd., Middleburg, VA

September 14, 2016

Project Name: Robinson Terminal North Project Location: 500/501 N. Union St.

Zinc

Sample ID: M1Hpt-06(1-2) Matrix: SOIL	Date/Time Sampled: Date/Time Received:			•				0718-005	
PP Metals	Analytica	Analytical Method: SW-846 6020			Preparation Method: 3050B				
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst	
Antimony	ND	mg/kg	2.5		1	09/08/16	09/09/16 20:26	1033	
Arsenic	1.2	mg/kg	0.50		1	09/08/16	09/09/16 20:26	1033	
Beryllium	ND	mg/kg	2.5		1	09/08/16	09/09/16 20:26	1033	
Cadmium	ND	mg/kg	2.5		1	09/08/16	09/09/16 20:26	1033	
Chromium	8.1	mg/kg	2.5		1	09/08/16	09/09/16 20:26	1033	
Copper	6.0	mg/kg	2.5		1	09/08/16	09/09/16 20:26	1033	
Lead	6.7	mg/kg	2.5		1	09/08/16	09/09/16 20:26	1033	
Mercury	0.12	mg/kg	0.10		1	09/08/16	09/09/16 20:26	1033	
Nickel	3.2	mg/kg	2.5		1	09/08/16	09/09/16 20:26	1033	
Selenium	ND	mg/kg	2.5		1	09/08/16	09/09/16 20:26	1033	
Silver	ND	mg/kg	2.5		1	09/08/16	09/09/16 20:26	1033	
Thallium	ND	mg/kg	2.0		1	09/08/16	09/09/16 20:26	1033	

10

15

mg/kg

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090718

Icor Ltd., Middleburg, VA

September 14, 2016

Sample ID: M1Hpt-06(4-5)			e Sampled:			PSS Sample	e ID: 1609071	8-006
Matrix: SOIL		Date/Time	Received:	09/07/2	016 13:35	% S	olids: 86	
PP Metals	Analytica	al Method:	SW-846 6020	A Preparation Method: 30			nod: 3050B	
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Antimony	17	mg/kg	2.5		1	09/08/16	09/09/16 20:32	2 1033
Arsenic	150	mg/kg	0.50		1	09/08/16	09/09/16 20:32	2 1033
Beryllium	ND	mg/kg	2.5		1	09/08/16	09/09/16 20:32	2 1033
Cadmium	ND	mg/kg	2.5		1	09/08/16	09/09/16 20:32	2 1033
Chromium	11	mg/kg	2.5		1	09/08/16	09/09/16 20:32	2 1033
Copper	410	mg/kg	25		10	09/08/16	09/12/16 14:28	3 1033
Lead	1,800	mg/kg	25		10	09/08/16	09/12/16 14:28	3 1033
Mercury	0.47	mg/kg	0.10		1	09/08/16	09/09/16 20:32	2 1033
Nickel	6.5	mg/kg	2.5		1	09/08/16	09/09/16 20:32	2 1033
Selenium	6.3	mg/kg	2.5		1	09/08/16	09/09/16 20:32	2 1033
Silver	3.3	mg/kg	2.5		1	09/08/16	09/09/16 20:32	2 1033
Thallium	2.4	mg/kg	2.0		1	09/08/16	09/09/16 20:32	2 1033
Zinc	370	mg/kg	10		1	09/08/16	09/09/16 20:32	2 1033
Sample ID: M1Hpt-07(1-2)		Date/Tim	e Sampled:	09/06/2	016 14:05	PSS Sampl	e ID: 1609071	8-007
Matrix: SOIL	1	Date/Time	Received:	09/07/2	016 13:35	% S	olids: 92	
Arsenic	Analytica	al Method:	SW-846 6020	Α	F	Preparation Meth	nod: 3050B	
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Arsenic	1.0	mg/kg	0.47		1	09/08/16	09/09/16 20:39	9 1033

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090718

Icor Ltd., Middleburg, VA September 14, 2016

Sample ID: M1Hpt-07(7-8) Matrix: SOIL			Sampled: 09/06 Received: 09/07		•	e ID: 1609071 olids: 83	8-008
Total Petroleum Hydrocarbons - DRO	Analytica	ll Method: S	W-846 8015 C		Preparation Meth	nod: SW3550C	
_	Result	Units	RL Flag	Dil	Prepared	Analyzed	Analyst
TPH-DRO (Diesel Range Organics)	59	mg/kg	12	1	09/12/16	09/14/16 00:4	3 1045
Total Petroleum Hydrocarbons-GRO	Analytica	ıl Method: S	W-846 8015C		Preparation Meth	nod: 5030	
_	Result	Units	RL Flag	Dil	Prepared	Analyzed	Analyst
TPH-GRO (Gasoline Range Organics)	1.300.000	ug/kg	12,000	100	09/08/16	09/08/16 16:0	0 1035

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090718

Icor Ltd., Middleburg, VA

September 14, 2016

Sample ID: M1Hpt-07(7-8)			-	09/06/2016 14:1		e ID: 16090718	8-008
Matrix: SOIL				09/07/2016 13:3		Solids: 83	
TCL Volatile Organic Compounds	Analytica	Il Method:	SW-846 8260	В	Preparation Met	hod: 5035A	
_	Result	Units	RL	Flag Dil	Prepared	Analyzed	Analyst
Acetone	ND	ug/kg	1,900	100	09/12/16	09/12/16 19:29	9 1011
Benzene	ND	ug/kg	460	100	09/12/16	09/12/16 19:29	9 1011
Bromochloromethane	ND	ug/kg	460	100	09/12/16	09/12/16 19:29	9 1011
Bromodichloromethane	ND	ug/kg	460	100	09/12/16	09/12/16 19:29	9 1011
Bromoform	ND	ug/kg	460	100	09/12/16	09/12/16 19:29	9 1011
Bromomethane	ND	ug/kg	460	100	09/12/16	09/12/16 19:29	9 1011
2-Butanone (MEK)	ND	ug/kg	1,900	100	09/12/16	09/12/16 19:29	9 1011
Carbon Disulfide	ND	ug/kg	930	100	09/12/16	09/12/16 19:29	9 1011
Carbon Tetrachloride	ND	ug/kg	460	100	09/12/16	09/12/16 19:29	9 1011
Chlorobenzene	ND	ug/kg	460	100	09/12/16	09/12/16 19:29	9 1011
Chloroethane	ND	ug/kg	460	100	09/12/16	09/12/16 19:29	9 1011
Chloroform	ND	ug/kg	460	100	09/12/16	09/12/16 19:29	9 1011
Chloromethane	ND	ug/kg	460	100	09/12/16	09/12/16 19:29	9 1011
Cyclohexane	ND	ug/kg	1,900	100	09/12/16	09/12/16 19:29	9 1011
1,2-Dibromo-3-Chloropropane	ND	ug/kg	3,700	100	09/12/16	09/12/16 19:29	9 1011
Dibromochloromethane	ND	ug/kg	460	100	09/12/16	09/12/16 19:29	9 1011
1,2-Dibromoethane (EDB)	ND	ug/kg	460	100	09/12/16	09/12/16 19:29	9 1011
1,2-Dichlorobenzene	ND	ug/kg	460	100	09/12/16	09/12/16 19:29	9 1011
1,3-Dichlorobenzene	ND	ug/kg	460	100	09/12/16	09/12/16 19:29	9 1011
1,4-Dichlorobenzene	ND	ug/kg	460	100	09/12/16	09/12/16 19:29	9 1011
Dichlorodifluoromethane	ND	ug/kg	460	100	09/12/16	09/12/16 19:29	9 1011
1,1-Dichloroethane	ND	ug/kg	460	100	09/12/16	09/12/16 19:29	9 1011
1,2-Dichloroethane	ND	ug/kg	460	100	09/12/16	09/12/16 19:29	9 1011
1,1-Dichloroethene	ND	ug/kg	460	100	09/12/16	09/12/16 19:29	9 1011
1,2-Dichloropropane	ND	ug/kg	460	100	09/12/16	09/12/16 19:29	9 1011
cis-1,2-Dichloroethene	ND	ug/kg	460	100	09/12/16	09/12/16 19:29	0 1011
cis-1,3-Dichloropropene	ND	ug/kg	460	100		09/12/16 19:29	
trans-1,2-Dichloroethene	ND	ug/kg	460	100	09/12/16	09/12/16 19:29	9 1011
trans-1,3-Dichloropropene	ND	ug/kg	460	100		09/12/16 19:29	
Ethylbenzene	ND	ug/kg	460	100		09/12/16 19:29	

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090718

Icor Ltd., Middleburg, VA

September 14, 2016

Sample ID: M1Hpt-07(7-8)			Sampled:			•	e ID: 16090718	3-008
Matrix: SOIL		Date/Time	Received:	09/07/20	16 13:35	% S	olids: 83	
TCL Volatile Organic Compounds	Analytica	l Method: S	SW-846 8260	В		Preparation Meth	nod: 5035A	
_	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
2-Hexanone	ND	ug/kg	1,900		100	09/12/16	09/12/16 19:29	1011
Isopropylbenzene	ND	ug/kg	460		100	09/12/16	09/12/16 19:29	1011
Methyl Acetate	ND	ug/kg	1,900		100	09/12/16	09/12/16 19:29	1011
Methylcyclohexane	ND	ug/kg	1,900		100	09/12/16	09/12/16 19:29	1011
Methylene Chloride	ND	ug/kg	460		100	09/12/16	09/12/16 19:29	1011
4-Methyl-2-Pentanone	ND	ug/kg	1,900		100	09/12/16	09/12/16 19:29	1011
Methyl-t-butyl ether	ND	ug/kg	460		100	09/12/16	09/12/16 19:29	1011
Naphthalene	ND	ug/kg	460		100	09/12/16	09/12/16 19:29	1011
Styrene	ND	ug/kg	460		100	09/12/16	09/12/16 19:29	1011
1,1,2,2-Tetrachloroethane	ND	ug/kg	460		100	09/12/16	09/12/16 19:29	1011
Tetrachloroethene	ND	ug/kg	460		100	09/12/16	09/12/16 19:29	1011
Toluene	ND	ug/kg	460		100	09/12/16	09/12/16 19:29	1011
1,2,3-Trichlorobenzene	ND	ug/kg	460		100	09/12/16	09/12/16 19:29	1011
1,2,4-Trichlorobenzene	ND	ug/kg	460		100	09/12/16	09/12/16 19:29	1011
1,1,1-Trichloroethane	ND	ug/kg	460		100	09/12/16	09/12/16 19:29	1011
1,1,2-Trichloroethane	ND	ug/kg	460		100	09/12/16	09/12/16 19:29	1011
Trichloroethene	ND	ug/kg	460		100	09/12/16	09/12/16 19:29	1011
Trichlorofluoromethane	ND	ug/kg	460		100	09/12/16	09/12/16 19:29	1011
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	ug/kg	460		100	09/12/16	09/12/16 19:29	1011
Vinyl Chloride	ND	ug/kg	460		100	09/12/16	09/12/16 19:29	1011
m,p-Xylenes	ND	ug/kg	930		100	09/12/16	09/12/16 19:29	1011
o-Xylene	ND	ug/kg	460		100	09/12/16	09/12/16 19:29	1011

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090718

Icor Ltd., Middleburg, VA September 14, 2016

Sample ID: M1Hpt-08(4-5) Matrix: SOIL			Sampled: 09/06 Received: 09/07			e ID: 16090718 olids: 85	8-009
Total Petroleum Hydrocarbons - DRO	Analytica	ll Method: S\	V-846 8015 C		Preparation Met	nod: SW3550C	
_	Result	Units	RL Flag	Dil	Prepared	Analyzed	Analyst
TPH-DRO (Diesel Range Organics)	ND	mg/kg	12	1	09/12/16	09/14/16 01:08	3 1045
Total Petroleum Hydrocarbons-GRO	Analytica	Il Method: S\	W-846 8015C		Preparation Met	nod: 5030	
_	Result	Units	RL Flag	Dil	Prepared	Analyzed	Analyst
TPH-GRO (Gasoline Range Organics)	260	ug/kg	120	1	09/08/16	09/08/16 14:28	3 1035

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090718

Icor Ltd., Middleburg, VA

September 14, 2016

Sample ID: M1Hpt-08(4-5)			Sampled:			·	e ID: 16090718	8-009
Matrix: SOIL			Received:				olids: 85	
TCL Volatile Organic Compounds	Analytica	I Method: St	W-846 8260	В		Preparation MetI	nod: 5035A	
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acetone	ND	ug/kg	17		1	09/12/16	09/12/16 16:49	1011
Benzene	ND	ug/kg	4.3		1	09/12/16	09/12/16 16:49	1011
Bromochloromethane	ND	ug/kg	4.3		1	09/12/16	09/12/16 16:49	1011
Bromodichloromethane	ND	ug/kg	4.3		1	09/12/16	09/12/16 16:49	1011
Bromoform	ND	ug/kg	4.3		1	09/12/16	09/12/16 16:49	1011
Bromomethane	ND	ug/kg	4.3		1	09/12/16	09/12/16 16:49	1011
2-Butanone (MEK)	ND	ug/kg	17		1	09/12/16	09/12/16 16:49	1011
Carbon Disulfide	ND	ug/kg	8.6		1	09/12/16	09/12/16 16:49	1011
Carbon Tetrachloride	ND	ug/kg	4.3		1	09/12/16	09/12/16 16:49	1011
Chlorobenzene	ND	ug/kg	4.3		1	09/12/16	09/12/16 16:49	1011
Chloroethane	ND	ug/kg	4.3		1	09/12/16	09/12/16 16:49	1011
Chloroform	ND	ug/kg	4.3		1	09/12/16	09/12/16 16:49	1011
Chloromethane	ND	ug/kg	4.3		1	09/12/16	09/12/16 16:49	1011
Cyclohexane	ND	ug/kg	17		1	09/12/16	09/12/16 16:49	1011
1,2-Dibromo-3-Chloropropane	ND	ug/kg	34		1	09/12/16	09/12/16 16:49	1011
Dibromochloromethane	ND	ug/kg	4.3		1	09/12/16	09/12/16 16:49	1011
1,2-Dibromoethane (EDB)	ND	ug/kg	4.3		1	09/12/16	09/12/16 16:49	1011
1,2-Dichlorobenzene	ND	ug/kg	4.3		1	09/12/16	09/12/16 16:49	1011
1,3-Dichlorobenzene	ND	ug/kg	4.3		1	09/12/16	09/12/16 16:49	1011
1,4-Dichlorobenzene	ND	ug/kg	4.3		1	09/12/16	09/12/16 16:49	1011
Dichlorodifluoromethane	ND	ug/kg	4.3		1	09/12/16	09/12/16 16:49	1011
1,1-Dichloroethane	ND	ug/kg	4.3		1	09/12/16	09/12/16 16:49	1011
1,2-Dichloroethane	ND	ug/kg	4.3		1	09/12/16	09/12/16 16:49	1011
1,1-Dichloroethene	ND	ug/kg	4.3		1	09/12/16	09/12/16 16:49	1011
cis-1,2-Dichloroethene	ND	ug/kg	4.3		1	09/12/16	09/12/16 16:49	1011
1,2-Dichloropropane	ND	ug/kg	4.3		1	09/12/16	09/12/16 16:49	1011
cis-1,3-Dichloropropene	ND	ug/kg	4.3		1	09/12/16	09/12/16 16:49	1011
trans-1,2-Dichloroethene	ND	ug/kg	4.3		1	09/12/16	09/12/16 16:49	1011
trans-1,3-Dichloropropene	ND	ug/kg	4.3		1	09/12/16	09/12/16 16:49	1011
Ethylbenzene	ND	ug/kg	4.3		1	09/12/16	09/12/16 16:49	1011

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090718

Icor Ltd., Middleburg, VA

September 14, 2016

Sample ID: M1Hpt-08(4-5)		Date/Time	Sampled:	09/06/2	016 10:5	PSS Sample	e ID: 16090718	3-009
Matrix: SOIL	[Date/Time	Received:	09/07/2	016 13:35	5 % S	olids: 85	
TCL Volatile Organic Compounds	Analytica	l Method: S	W-846 8260	В		Preparation Meth	nod: 5035A	
_	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
2-Hexanone	ND	ug/kg	17		1	09/12/16	09/12/16 16:49	1011
Isopropylbenzene	ND	ug/kg	4.3		1	09/12/16	09/12/16 16:49	1011
Methyl Acetate	ND	ug/kg	17		1	09/12/16	09/12/16 16:49	1011
Methylcyclohexane	ND	ug/kg	17		1	09/12/16	09/12/16 16:49	1011
Methylene Chloride	ND	ug/kg	4.3		1	09/12/16	09/12/16 16:49	1011
4-Methyl-2-Pentanone	ND	ug/kg	17		1	09/12/16	09/12/16 16:49	1011
Methyl-t-butyl ether	ND	ug/kg	4.3		1	09/12/16	09/12/16 16:49	1011
Naphthalene	ND	ug/kg	4.3		1	09/12/16	09/12/16 16:49	1011
Styrene	ND	ug/kg	4.3		1	09/12/16	09/12/16 16:49	1011
1,1,2,2-Tetrachloroethane	ND	ug/kg	4.3		1	09/12/16	09/12/16 16:49	1011
Tetrachloroethene	ND	ug/kg	4.3		1	09/12/16	09/12/16 16:49	1011
Toluene	ND	ug/kg	4.3		1	09/12/16	09/12/16 16:49	1011
1,2,3-Trichlorobenzene	ND	ug/kg	4.3		1	09/12/16	09/12/16 16:49	1011
1,2,4-Trichlorobenzene	ND	ug/kg	4.3		1	09/12/16	09/12/16 16:49	1011
1,1,1-Trichloroethane	ND	ug/kg	4.3		1	09/12/16	09/12/16 16:49	1011
1,1,2-Trichloroethane	ND	ug/kg	4.3		1	09/12/16	09/12/16 16:49	1011
Trichloroethene	ND	ug/kg	4.3		1	09/12/16	09/12/16 16:49	1011
Trichlorofluoromethane	ND	ug/kg	4.3		1	09/12/16	09/12/16 16:49	1011
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	ug/kg	4.3		1	09/12/16	09/12/16 16:49	1011
Vinyl Chloride	ND	ug/kg	4.3		1	09/12/16	09/12/16 16:49	1011
m,p-Xylenes	ND	ug/kg	8.6		1	09/12/16	09/12/16 16:49	1011
o-Xylene	ND	ug/kg	4.3		1	09/12/16	09/12/16 16:49	1011

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090718

Icor Ltd., Middleburg, VA September 14, 2016

Sample ID: M1Hpt-08(37.8-38.8) Matrix: SOIL			Sampled: 09/06/ Received: 09/07/		•	e ID: 16090718-010 olids: 67
Total Petroleum Hydrocarbons - DRO	Analytica	l Method: SV	V-846 8015 C		Preparation Meth	nod: SW3550C
_	Result	Units	RL Flag	Dil	Prepared	Analyzed Analyst
TPH-DRO (Diesel Range Organics)	ND	mg/kg	15	1	09/12/16	09/14/16 01:08 1045
Total Petroleum Hydrocarbons-GRO	Analytica	l Method: SV	V-846 8015C		Preparation Meth	nod: 5030
_	Result	Units	RL Flag	Dil	Prepared	Analyzed Analyst
TPH-GRO (Gasoline Range Organics)	160	ug/kg	150	1	09/08/16	09/08/16 14:59 1035

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090718

Icor Ltd., Middleburg, VA

September 14, 2016

Sample ID: M1Hpt-08(37.8-38.8)			e Sampled:			•	e ID: 16090718	8-010
Matrix: SOIL			Received:				folids: 67	
TCL Volatile Organic Compounds	Analytica	Il Method: S	SW-846 8260	В		Preparation Metl	nod: 5035A	
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acetone	66	ug/kg	27		1	09/12/16	09/12/16 17:29	1011
Benzene	ND	ug/kg	6.8		1	09/12/16	09/12/16 17:29	1011
Bromochloromethane	ND	ug/kg	6.8		1	09/12/16	09/12/16 17:29	1011
Bromodichloromethane	ND	ug/kg	6.8		1	09/12/16	09/12/16 17:29	1011
Bromoform	ND	ug/kg	6.8		1	09/12/16	09/12/16 17:29	1011
Bromomethane	ND	ug/kg	6.8		1	09/12/16	09/12/16 17:29	1011
2-Butanone (MEK)	ND	ug/kg	27		1	09/12/16	09/12/16 17:29	1011
Carbon Disulfide	ND	ug/kg	14		1	09/12/16	09/12/16 17:29	1011
Carbon Tetrachloride	ND	ug/kg	6.8		1	09/12/16	09/12/16 17:29	1011
Chlorobenzene	ND	ug/kg	6.8		1	09/12/16	09/12/16 17:29	1011
Chloroethane	ND	ug/kg	6.8		1	09/12/16	09/12/16 17:29	1011
Chloroform	ND	ug/kg	6.8		1	09/12/16	09/12/16 17:29	1011
Chloromethane	ND	ug/kg	6.8		1	09/12/16	09/12/16 17:29	1011
Cyclohexane	ND	ug/kg	27		1	09/12/16	09/12/16 17:29	1011
1,2-Dibromo-3-Chloropropane	ND	ug/kg	55		1	09/12/16	09/12/16 17:29	1011
Dibromochloromethane	ND	ug/kg	6.8		1	09/12/16	09/12/16 17:29	1011
1,2-Dibromoethane (EDB)	ND	ug/kg	6.8		1	09/12/16	09/12/16 17:29	1011
1,2-Dichlorobenzene	ND	ug/kg	6.8		1	09/12/16	09/12/16 17:29	1011
1,3-Dichlorobenzene	ND	ug/kg	6.8		1	09/12/16	09/12/16 17:29	1011
1,4-Dichlorobenzene	ND	ug/kg	6.8		1	09/12/16	09/12/16 17:29	1011
Dichlorodifluoromethane	ND	ug/kg	6.8		1	09/12/16	09/12/16 17:29	1011
1,1-Dichloroethane	ND	ug/kg	6.8		1	09/12/16	09/12/16 17:29	1011
1,2-Dichloroethane	ND	ug/kg	6.8		1	09/12/16	09/12/16 17:29	1011
1,1-Dichloroethene	ND	ug/kg	6.8		1	09/12/16	09/12/16 17:29	1011
1,2-Dichloropropane	ND	ug/kg	6.8		1	09/12/16	09/12/16 17:29	1011
cis-1,2-Dichloroethene	ND	ug/kg	6.8		1	09/12/16	09/12/16 17:29	1011
cis-1,3-Dichloropropene	ND	ug/kg	6.8		1	09/12/16	09/12/16 17:29	1011
trans-1,2-Dichloroethene	ND	ug/kg	6.8		1	09/12/16	09/12/16 17:29	1011
trans-1,3-Dichloropropene	ND	ug/kg	6.8		1	09/12/16		
Ethylbenzene	ND	ug/kg	6.8		1	09/12/16	09/12/16 17:29	1011

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090718

Icor Ltd., Middleburg, VA

September 14, 2016

Sample ID: M1Hpt-08(37.8-38.8)			Sampled:			•	e ID: 16090718	3-010
Matrix: SOIL		Date/Time	Received:	09/07/2	016 13:35	% S	olids: 67	
TCL Volatile Organic Compounds	Analytica	l Method: S	W-846 8260	В		Preparation Meth	nod: 5035A	
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
2-Hexanone	ND	ug/kg	27		1	09/12/16	09/12/16 17:29	1011
Isopropylbenzene	ND	ug/kg	6.8		1	09/12/16	09/12/16 17:29	1011
Methyl Acetate	ND	ug/kg	27		1	09/12/16	09/12/16 17:29	1011
Methylcyclohexane	ND	ug/kg	27		1	09/12/16	09/12/16 17:29	1011
Methylene Chloride	ND	ug/kg	6.8		1	09/12/16	09/12/16 17:29	1011
4-Methyl-2-Pentanone	ND	ug/kg	27		1	09/12/16	09/12/16 17:29	1011
Methyl-t-butyl ether	ND	ug/kg	6.8		1	09/12/16	09/12/16 17:29	1011
Naphthalene	ND	ug/kg	6.8		1	09/12/16	09/12/16 17:29	1011
Styrene	ND	ug/kg	6.8		1	09/12/16	09/12/16 17:29	1011
1,1,2,2-Tetrachloroethane	ND	ug/kg	6.8		1	09/12/16	09/12/16 17:29	1011
Tetrachloroethene	ND	ug/kg	6.8		1	09/12/16	09/12/16 17:29	1011
Toluene	ND	ug/kg	6.8		1	09/12/16	09/12/16 17:29	1011
1,2,3-Trichlorobenzene	ND	ug/kg	6.8		1	09/12/16	09/12/16 17:29	1011
1,2,4-Trichlorobenzene	ND	ug/kg	6.8		1	09/12/16	09/12/16 17:29	1011
1,1,1-Trichloroethane	ND	ug/kg	6.8		1	09/12/16	09/12/16 17:29	1011
1,1,2-Trichloroethane	ND	ug/kg	6.8		1	09/12/16	09/12/16 17:29	1011
Trichloroethene	ND	ug/kg	6.8		1	09/12/16	09/12/16 17:29	1011
Trichlorofluoromethane	ND	ug/kg	6.8		1	09/12/16	09/12/16 17:29	1011
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	ug/kg	6.8		1	09/12/16	09/12/16 17:29	1011
Vinyl Chloride	ND	ug/kg	6.8		1	09/12/16	09/12/16 17:29	1011
m,p-Xylenes	ND	ug/kg	14		1	09/12/16	09/12/16 17:29	1011
o-Xylene	ND	ug/kg	6.8		1	09/12/16	09/12/16 17:29	1011

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090718

Icor Ltd., Middleburg, VA

September 14, 2016

Sample ID: M1Hpt-08(37.8-38.8)			-		2016 12:05	PSS Sampl	e ID: 16090718	3-010	
Matrix: SOIL	[Date/Time	Received:	09/07/2	2016 13:35	% Solids: 67			
TCL Semivolatile Organic Compounds	Analytica	I Method: S'	W-846 8270	С	F	Preparation Met	nod: SW3550C		
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst	
Acenaphthene	ND	ug/kg	250		1	09/08/16	09/08/16 18:04	1055	
Acenaphthylene	ND	ug/kg	250		1	09/08/16	09/08/16 18:04	1055	
Acetophenone	ND	ug/kg	250		1	09/08/16	09/08/16 18:04	1055	
Anthracene	ND	ug/kg	250		1	09/08/16	09/08/16 18:04	1055	
Atrazine	ND	ug/kg	250		1	09/08/16	09/08/16 18:04	1055	
Benzo(a)anthracene	ND	ug/kg	250		1	09/08/16	09/08/16 18:04	1055	
Benzo(a)pyrene	ND	ug/kg	250		1	09/08/16	09/08/16 18:04	1055	
Benzo(b)fluoranthene	ND	ug/kg	250		1	09/08/16	09/08/16 18:04	1055	
Benzo(g,h,i)perylene	ND	ug/kg	250		1	09/08/16	09/08/16 18:04	1055	
Benzo(k)fluoranthene	ND	ug/kg	250		1	09/08/16	09/08/16 18:04	1055	
Biphenyl (Diphenyl)	ND	ug/kg	250		1	09/08/16	09/08/16 18:04	1055	
Butyl benzyl phthalate	ND	ug/kg	250		1	09/08/16	09/08/16 18:04	1055	
bis(2-chloroethoxy) methane	ND	ug/kg	250		1	09/08/16	09/08/16 18:04	1055	
bis(2-chloroethyl) ether	ND	ug/kg	250		1	09/08/16	09/08/16 18:04	1055	
bis(2-chloroisopropyl) ether	ND	ug/kg	250		1	09/08/16	09/08/16 18:04	1055	
bis(2-ethylhexyl) phthalate	ND	ug/kg	250		1	09/08/16	09/08/16 18:04	1055	
4-Bromophenylphenyl ether	ND	ug/kg	250		1	09/08/16	09/08/16 18:04	1055	
Di-n-butyl phthalate	ND	ug/kg	250		1	09/08/16	09/08/16 18:04	1055	
Carbazole	ND	ug/kg	250		1	09/08/16	09/08/16 18:04	1055	
Caprolactam	ND	ug/kg	250		1	09/08/16	09/08/16 18:04	1055	
4-Chloro-3-methyl phenol	ND	ug/kg	250		1	09/08/16	09/08/16 18:04	1055	
4-Chloroaniline	ND	ug/kg	250		1	09/08/16	09/08/16 18:04	1055	
2-Chloronaphthalene	ND	ug/kg	250		1	09/08/16	09/08/16 18:04	1055	
2-Chlorophenol	ND	ug/kg	250		1	09/08/16	09/08/16 18:04	1055	
4-Chlorophenyl Phenyl ether	ND	ug/kg	250		1	09/08/16	09/08/16 18:04	1055	
Chrysene	ND	ug/kg	250		1	09/08/16	09/08/16 18:04	1055	
Dibenz(a,h)Anthracene	ND	ug/kg	250		1	09/08/16	09/08/16 18:04	1055	
Dibenzofuran	ND	ug/kg	250		1	09/08/16	09/08/16 18:04	1055	
3,3-Dichlorobenzidine	ND	ug/kg	250		1	09/08/16	09/08/16 18:04	1055	
2,4-Dichlorophenol	ND	ug/kg	250		1	09/08/16	09/08/16 18:04	1055	

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090718

Icor Ltd., Middleburg, VA

September 14, 2016

Sample ID: M1Hpt-08(37.8-38.8)			_		2016 12:05	PSS Sampl	e ID: 16090718	3-010
Matrix: SOIL	[Date/Time	Received:	09/07/2	2016 13:35	% S	olids: 67	
TCL Semivolatile Organic Compounds	Analytica	l Method: S	W-846 8270	С	F	Preparation Meth	nod: SW3550C	
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Diethyl phthalate	ND	ug/kg	250		1	09/08/16	09/08/16 18:04	1055
Dimethyl phthalate	ND	ug/kg	250		1	09/08/16	09/08/16 18:04	1055
2,4-Dimethylphenol	ND	ug/kg	250		1	09/08/16	09/08/16 18:04	1055
4,6-Dinitro-2-methyl phenol	ND	ug/kg	250		1	09/08/16	09/08/16 18:04	1055
2,4-Dinitrophenol	ND	ug/kg	500		1	09/08/16	09/08/16 18:04	1055
2,4-Dinitrotoluene	ND	ug/kg	250		1	09/08/16	09/08/16 18:04	1055
2,6-Dinitrotoluene	ND	ug/kg	250		1	09/08/16	09/08/16 18:04	1055
Fluoranthene	ND	ug/kg	250		1	09/08/16	09/08/16 18:04	1055
Fluorene	ND	ug/kg	250		1	09/08/16	09/08/16 18:04	1055
Hexachlorobenzene	ND	ug/kg	250		1	09/08/16	09/08/16 18:04	1055
Hexachlorobutadiene	ND	ug/kg	250		1	09/08/16	09/08/16 18:04	1055
Hexachlorocyclopentadiene	ND	ug/kg	250		1	09/08/16	09/08/16 18:04	1055
Hexachloroethane	ND	ug/kg	250		1	09/08/16	09/08/16 18:04	1055
Indeno(1,2,3-c,d)Pyrene	ND	ug/kg	250		1	09/08/16	09/08/16 18:04	1055
Isophorone	ND	ug/kg	250		1	09/08/16	09/08/16 18:04	1055
2-Methylnaphthalene	ND	ug/kg	250		1	09/08/16	09/08/16 18:04	1055
2-Methyl phenol	ND	ug/kg	250		1	09/08/16	09/08/16 18:04	1055
3&4-Methylphenol	ND	ug/kg	250		1	09/08/16	09/08/16 18:04	1055
Naphthalene	ND	ug/kg	250		1	09/08/16	09/08/16 18:04	1055
2-Nitroaniline	ND	ug/kg	250		1	09/08/16	09/08/16 18:04	1055
3-Nitroaniline	ND	ug/kg	250		1	09/08/16	09/08/16 18:04	1055
4-Nitroaniline	ND	ug/kg	250		1	09/08/16	09/08/16 18:04	1055
Nitrobenzene	ND	ug/kg	250		1	09/08/16	09/08/16 18:04	1055
2-Nitrophenol	ND	ug/kg	250		1	09/08/16	09/08/16 18:04	1055
4-Nitrophenol	ND	ug/kg	250		1	09/08/16	09/08/16 18:04	1055
N-Nitrosodi-n-propyl amine	ND	ug/kg	250		1	09/08/16	09/08/16 18:04	1055
N-Nitrosodiphenylamine	ND	ug/kg	250		1	09/08/16	09/08/16 18:04	1055
Di-n-octyl phthalate	ND	ug/kg	250		1	09/08/16	09/08/16 18:04	1055
Pentachlorophenol	ND	ug/kg	250		1	09/08/16	09/08/16 18:04	1055
Phenanthrene	ND	ug/kg	250		1	09/08/16	09/08/16 18:04	1055

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090718

Icor Ltd., Middleburg, VA

September 14, 2016

Sample ID: M1Hpt-08(37.8-38.8)		Date/Time	Sampled:	09/06/	2016 12:05	PSS Sample	e ID: 1609071	8-010
Matrix: SOIL		ate/Time	Received:	09/07/	2016 13:35	% S	olids: 67	
TCL Semivolatile Organic Compounds	Analytical	Method: S	SW-846 8270	С		Preparation Meth	nod: SW3550C	
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Phenol	ND	ug/kg	250		1	09/08/16	09/08/16 18:04	1 1055
Pyrene	ND	ug/kg	250		1	09/08/16	09/08/16 18:04	1 1055
Pyridine	ND	ug/kg	250		1	09/08/16	09/08/16 18:04	1 1055
2,4,5-Trichlorophenol	ND	ug/kg	250		1	09/08/16	09/08/16 18:04	4 1055
2,4,6-Trichlorophenol	ND	ug/kg	250		1	09/08/16	09/08/16 18:04	1 1055

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090718

Icor Ltd., Middleburg, VA September 14, 2016

Sample ID: M1Hpt-10(24.5-25.5) Matrix: SOIL			e Sampled: Received:				e ID: 1609071 olids: 67	18-011
Total Petroleum Hydrocarbons - DRO	Analytica	l Method: S	SW-846 8015	С		Preparation Met	nod: SW3550C	
DF/HF - No. 2/diesel fuel and heavier fuel/oil	l patterns obse	erved in sam	ple.					
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-DRO (Diesel Range Organics)	150	mg/kg	15	DF	1	09/12/16	09/14/16 01:3	3 1045
Total Petroleum Hydrocarbons-GRO	Analytica	l Method: S	SW-846 8015	С		Preparation Met	nod: 5030	
_	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-GRO (Gasoline Range Organics)	180	ug/kg	150		1	09/08/16	09/08/16 15:3	0 1035

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090718

Icor Ltd., Middleburg, VA

September 14, 2016

Sample ID: M1Hpt-10(24.5-25.5)			Sampled:			·	e ID: 16090718	8-011
Matrix: SOIL			Received:				olids: 67	
TCL Volatile Organic Compounds	Analytica	ıl Method: S	SW-846 8260	В		Preparation Metl	nod: 5035A	
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acetone	84	ug/kg	27		1	09/12/16	09/12/16 18:09	1011
Benzene	ND	ug/kg	6.9		1	09/12/16	09/12/16 18:09	1011
Bromochloromethane	ND	ug/kg	6.9		1	09/12/16	09/12/16 18:09	1011
Bromodichloromethane	ND	ug/kg	6.9		1	09/12/16	09/12/16 18:09	1011
Bromoform	ND	ug/kg	6.9		1	09/12/16	09/12/16 18:09	1011
Bromomethane	ND	ug/kg	6.9		1	09/12/16	09/12/16 18:09	1011
2-Butanone (MEK)	ND	ug/kg	27		1	09/12/16	09/12/16 18:09	1011
Carbon Disulfide	ND	ug/kg	14		1	09/12/16	09/12/16 18:09	1011
Carbon Tetrachloride	ND	ug/kg	6.9		1	09/12/16	09/12/16 18:09	1011
Chlorobenzene	ND	ug/kg	6.9		1	09/12/16	09/12/16 18:09	1011
Chloroethane	ND	ug/kg	6.9		1	09/12/16	09/12/16 18:09	1011
Chloroform	ND	ug/kg	6.9		1	09/12/16	09/12/16 18:09	1011
Chloromethane	ND	ug/kg	6.9		1	09/12/16	09/12/16 18:09	1011
Cyclohexane	ND	ug/kg	27		1	09/12/16	09/12/16 18:09	1011
1,2-Dibromo-3-Chloropropane	ND	ug/kg	55		1	09/12/16	09/12/16 18:09	1011
Dibromochloromethane	ND	ug/kg	6.9		1	09/12/16	09/12/16 18:09	1011
1,2-Dibromoethane (EDB)	ND	ug/kg	6.9		1	09/12/16	09/12/16 18:09	1011
1,2-Dichlorobenzene	ND	ug/kg	6.9		1	09/12/16	09/12/16 18:09	1011
1,3-Dichlorobenzene	ND	ug/kg	6.9		1	09/12/16	09/12/16 18:09	1011
1,4-Dichlorobenzene	ND	ug/kg	6.9		1	09/12/16	09/12/16 18:09	1011
Dichlorodifluoromethane	ND	ug/kg	6.9		1	09/12/16	09/12/16 18:09	1011
1,1-Dichloroethane	ND	ug/kg	6.9		1	09/12/16	09/12/16 18:09	1011
1,2-Dichloroethane	ND	ug/kg	6.9		1	09/12/16	09/12/16 18:09	1011
1,1-Dichloroethene	ND	ug/kg	6.9		1	09/12/16	09/12/16 18:09	1011
1,2-Dichloropropane	ND	ug/kg	6.9		1	09/12/16	09/12/16 18:09	1011
cis-1,2-Dichloroethene	ND	ug/kg	6.9		1	09/12/16	09/12/16 18:09	1011
cis-1,3-Dichloropropene	ND	ug/kg	6.9		1	09/12/16	09/12/16 18:09	1011
trans-1,2-Dichloroethene	ND	ug/kg	6.9		1	09/12/16	09/12/16 18:09	1011
trans-1,3-Dichloropropene	ND	ug/kg	6.9		1		09/12/16 18:09	
Ethylbenzene	ND	ug/kg	6.9		1	09/12/16	09/12/16 18:09	1011

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090718

Icor Ltd., Middleburg, VA

September 14, 2016

Sample ID: M1Hpt-10(24.5-25.5)		Date/Time	e Sampled:	09/06/201	6 10:10	PSS Sample	e ID: 16090718	3-011
Matrix: SOIL		Date/Time	Received:	09/07/201	6 13:35	5 % S	olids: 67	
TCL Volatile Organic Compounds	Analytica	l Method: S	SW-846 8260	В		Preparation Meth	nod: 5035A	
	Result	Units	RI	Flag Di	I	Prepared	Analyzed	Analyst
2-Hexanone	ND	ug/kg	27	<u> </u>	1	09/12/16	09/12/16 18:09	
Isopropylbenzene	ND	ug/kg	6.9		1	09/12/16	09/12/16 18:09	1011
Methyl Acetate	ND	ug/kg	27		1	09/12/16	09/12/16 18:09	1011
Methylcyclohexane	ND	ug/kg	27		1	09/12/16	09/12/16 18:09	1011
Methylene Chloride	ND	ug/kg	6.9		1	09/12/16	09/12/16 18:09	1011
4-Methyl-2-Pentanone	ND	ug/kg	27		1	09/12/16	09/12/16 18:09	1011
Methyl-t-butyl ether	ND	ug/kg	6.9		1	09/12/16	09/12/16 18:09	1011
Naphthalene	10	ug/kg	6.9		1	09/12/16	09/12/16 18:09	1011
Styrene	ND	ug/kg	6.9		1	09/12/16	09/12/16 18:09	1011
1,1,2,2-Tetrachloroethane	ND	ug/kg	6.9		1	09/12/16	09/12/16 18:09	1011
Tetrachloroethene	ND	ug/kg	6.9		1	09/12/16	09/12/16 18:09	1011
Toluene	ND	ug/kg	6.9		1	09/12/16	09/12/16 18:09	1011
1,2,3-Trichlorobenzene	ND	ug/kg	6.9		1	09/12/16	09/12/16 18:09	1011
1,2,4-Trichlorobenzene	ND	ug/kg	6.9		1	09/12/16	09/12/16 18:09	1011
1,1,1-Trichloroethane	ND	ug/kg	6.9		1	09/12/16	09/12/16 18:09	1011
1,1,2-Trichloroethane	ND	ug/kg	6.9		1	09/12/16	09/12/16 18:09	1011
Trichloroethene	ND	ug/kg	6.9		1	09/12/16	09/12/16 18:09	1011
Trichlorofluoromethane	ND	ug/kg	6.9		1	09/12/16	09/12/16 18:09	1011
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	ug/kg	6.9		1	09/12/16	09/12/16 18:09	1011
Vinyl Chloride	ND	ug/kg	6.9		1	09/12/16	09/12/16 18:09	1011
m,p-Xylenes	ND	ug/kg	14		1	09/12/16	09/12/16 18:09	1011
o-Xylene	ND	ug/kg	6.9		1	09/12/16	09/12/16 18:09	1011

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090718

Icor Ltd., Middleburg, VA

September 14, 2016

Sample ID: M1Hpt-10(24.5-25.5)			•	09/06/2016 10:	•	e ID: 16090718	8-011
Matrix: SOIL				09/07/2016 13:		Solids: 67	
TCL Semivolatile Organic Compounds	Analytica	al Method:	SW-846 8270	С	Preparation Met	hod: SW3550C	
	Result	Units	RL	Flag Dil	Prepared	Analyzed	Analyst
Acenaphthene	2,300	ug/kg	250	1	09/08/16	09/08/16 20:53	1055
Acenaphthylene	ND	ug/kg	250	1	09/08/16	09/08/16 20:53	1055
Acetophenone	ND	ug/kg	250	1	09/08/16	09/08/16 20:53	1055
Anthracene	3,400	ug/kg	250	1	09/08/16	09/08/16 20:53	3 1055
Atrazine	ND	ug/kg	250	1	09/08/16	09/08/16 20:53	3 1055
Benzo(a)anthracene	5,500	ug/kg	1,200	5	09/08/16	09/09/16 13:11	1055
Benzo(a)pyrene	5,200	ug/kg	1,200	5	09/08/16	09/09/16 13:11	1055
Benzo(b)fluoranthene	3,800	ug/kg	1,200	5	09/08/16	09/09/16 13:11	1055
Benzo(g,h,i)perylene	2,700	ug/kg	250	1	09/08/16	09/08/16 20:53	3 1055
Benzo(k)fluoranthene	3,500	ug/kg	250	1	09/08/16	09/08/16 20:53	3 1055
Biphenyl (Diphenyl)	ND	ug/kg	250	1	09/08/16	09/08/16 20:53	1055
Butyl benzyl phthalate	ND	ug/kg	250	1	09/08/16	09/08/16 20:53	3 1055
bis(2-chloroethoxy) methane	ND	ug/kg	250	1	09/08/16	09/08/16 20:53	3 1055
bis(2-chloroethyl) ether	ND	ug/kg	250	1	09/08/16	09/08/16 20:53	3 1055
bis(2-chloroisopropyl) ether	ND	ug/kg	250	1	09/08/16	09/08/16 20:53	3 1055
bis(2-ethylhexyl) phthalate	ND	ug/kg	250	1	09/08/16	09/08/16 20:53	1055
4-Bromophenylphenyl ether	ND	ug/kg	250	1	09/08/16	09/08/16 20:53	1055
Di-n-butyl phthalate	ND	ug/kg	250	1	09/08/16	09/08/16 20:53	3 1055
Carbazole	ND	ug/kg	250	1	09/08/16	09/08/16 20:53	3 1055
Caprolactam	ND	ug/kg	250	1	09/08/16	09/08/16 20:53	3 1055
4-Chloro-3-methyl phenol	ND	ug/kg	250	1	09/08/16	09/08/16 20:53	1055
4-Chloroaniline	ND	ug/kg	250	1	09/08/16	09/08/16 20:53	3 1055
2-Chloronaphthalene	ND	ug/kg	250	1	09/08/16	09/08/16 20:53	1055
2-Chlorophenol	ND	ug/kg	250	1	09/08/16	09/08/16 20:53	3 1055
4-Chlorophenyl Phenyl ether	ND	ug/kg	250	1	09/08/16	09/08/16 20:53	3 1055
Chrysene	4,800	ug/kg	1,200	5	09/08/16	09/09/16 13:11	1055
Dibenz(a,h)Anthracene	1,200	ug/kg	250	1	09/08/16	09/08/16 20:53	1055
Dibenzofuran	1,200	ug/kg	250	1	09/08/16	09/08/16 20:53	1055
3,3-Dichlorobenzidine	ND	ug/kg	250	1	09/08/16	09/08/16 20:53	3 1055
2,4-Dichlorophenol	ND	ug/kg	250	1	09/08/16	09/08/16 20:53	3 1055

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090718

Icor Ltd., Middleburg, VA

September 14, 2016

Sample ID: M1Hpt-10(24.5-25.5)			Sampled:			PSS Sampl	e ID: 16090718	3-011
Matrix: SOIL	[Date/Time	Received:	09/07/2	2016 13:35	% S	olids: 67	
TCL Semivolatile Organic Compounds	Analytica	l Method: S	SW-846 8270	С	F	Preparation Meth	nod: SW3550C	
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
 Diethyl phthalate	ND	ug/kg	250		1	09/08/16	09/08/16 20:53	1055
Dimethyl phthalate	ND	ug/kg	250		1	09/08/16	09/08/16 20:53	1055
2,4-Dimethylphenol	ND	ug/kg	250		1	09/08/16	09/08/16 20:53	1055
4,6-Dinitro-2-methyl phenol	ND	ug/kg	250		1	09/08/16	09/08/16 20:53	1055
2,4-Dinitrophenol	ND	ug/kg	500		1	09/08/16	09/08/16 20:53	1055
2,4-Dinitrotoluene	ND	ug/kg	250		1	09/08/16	09/08/16 20:53	1055
2,6-Dinitrotoluene	ND	ug/kg	250		1	09/08/16	09/08/16 20:53	1055
Fluoranthene	8,700	ug/kg	1,200		5	09/08/16	09/09/16 13:11	1055
Fluorene	2,200	ug/kg	250		1	09/08/16	09/08/16 20:53	1055
Hexachlorobenzene	ND	ug/kg	250		1	09/08/16	09/08/16 20:53	1055
Hexachlorobutadiene	ND	ug/kg	250		1	09/08/16	09/08/16 20:53	1055
Hexachlorocyclopentadiene	ND	ug/kg	250		1	09/08/16	09/08/16 20:53	1055
Hexachloroethane	ND	ug/kg	250		1	09/08/16	09/08/16 20:53	1055
Indeno(1,2,3-c,d)Pyrene	3,100	ug/kg	250		1	09/08/16	09/08/16 20:53	1055
Isophorone	ND	ug/kg	250		1	09/08/16	09/08/16 20:53	1055
2-Methylnaphthalene	560	ug/kg	250		1	09/08/16	09/08/16 20:53	1055
2-Methyl phenol	ND	ug/kg	250		1	09/08/16	09/08/16 20:53	1055
3&4-Methylphenol	ND	ug/kg	250		1	09/08/16	09/08/16 20:53	1055
Naphthalene	570	ug/kg	250		1	09/08/16	09/08/16 20:53	1055
2-Nitroaniline	ND	ug/kg	250		1	09/08/16	09/08/16 20:53	1055
3-Nitroaniline	ND	ug/kg	250		1	09/08/16	09/08/16 20:53	1055
4-Nitroaniline	ND	ug/kg	250		1	09/08/16	09/08/16 20:53	1055
Nitrobenzene	ND	ug/kg	250		1	09/08/16	09/08/16 20:53	1055
2-Nitrophenol	ND	ug/kg	250		1	09/08/16	09/08/16 20:53	1055
4-Nitrophenol	ND	ug/kg	250		1	09/08/16	09/08/16 20:53	1055
N-Nitrosodi-n-propyl amine	ND	ug/kg	250		1	09/08/16	09/08/16 20:53	1055
N-Nitrosodiphenylamine	ND	ug/kg	250		1	09/08/16	09/08/16 20:53	1055
Di-n-octyl phthalate	ND	ug/kg	250		1	09/08/16	09/08/16 20:53	1055
Pentachlorophenol	ND	ug/kg	250		1	09/08/16	09/08/16 20:53	1055
Phenanthrene	8,200	ug/kg	1,200		5	09/08/16	09/09/16 13:11	1055

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090718

Icor Ltd., Middleburg, VA

September 14, 2016

Sample ID: M1Hpt-10(24.5-25.5) Matrix: SOIL			Sampled: Received:			·	e ID: 1609071 olids: 67	8-011
TCL Semivolatile Organic Compounds	Analytica	l Method: S	SW-846 8270	С		Preparation Meth	nod: SW3550C	
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Phenol	ND	ug/kg	250		1	09/08/16	09/08/16 20:53	3 1055
Pyrene	7,400	ug/kg	1,200		5	09/08/16	09/09/16 13:1	1 1055
Pyridine	ND	ug/kg	250		1	09/08/16	09/08/16 20:53	3 1055
2,4,5-Trichlorophenol	ND	ug/kg	250		1	09/08/16	09/08/16 20:53	3 1055
2,4,6-Trichlorophenol	ND	ug/kg	250		1	09/08/16	09/08/16 20:53	3 1055

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090718

Icor Ltd., Middleburg, VA September 14, 2016

Sample ID: M1Hpt-08-GW(37-40) Matrix: GROUND WATER			e Sampled: 09/0 e Received: ^{09/0}		·	e ID: 1609071	8-012
Total Petroleum Hydrocarbons-GRO	Analytica	Analytical Method: SW-846 8015C			Preparation Method: 5030B		
	Result	Units	RL Flag	g Dil	Prepared	Analyzed	Analyst
TPH-GRO (Gasoline Range Organics)	ND	ug/L	100	1	09/07/16	09/07/16 20:3	5 1035

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090718

Icor Ltd., Middleburg, VA

September 14, 2016

Sample ID: M1Hpt-08-GW(37-40)			Sampled:			PSS Sample	e ID: 16090718	3-012
Matrix: GROUND WATER		Date/Time	Received:	09/07/201	6 13:35			
TCL Volatile Organic Compounds	Analytica	l Method: S	W-846 8260	В	F	Preparation Meth	nod: 5030B	
pH=4	Danult	11:4	Di	Flag Di		Duamanad	A l	A l 4
Apatona	Result	Units	RL 10	Flag Di	<u>'</u> 1	Prepared	Analyzed	Analyst
Acetone	81 ND	ug/L	10			09/09/16		
Benzene	ND	ug/L	1.0		1	09/09/16	09/09/16 20:27 09/09/16 20:27	
Bromochloromethane	ND	ug/L	1.0		1			
Bromodichloromethane	ND	ug/L	1.0		1		09/09/16 20:27	
Bromoform	ND	ug/L	5.0		1		09/09/16 20:27	
Bromomethane	ND	ug/L	1.0		1		09/09/16 20:27	
2-Butanone (MEK)	40	ug/L	10		1		09/09/16 20:27 09/09/16 20:27	
Carbon Disulfide	ND	ug/L	10		1			
Carbon Tetrachloride	ND	ug/L	1.0		1			
Chloropthone	ND	ug/L	1.0		1		09/09/16 20:27 09/09/16 20:27	
Chloroform	ND	ug/L	1.0		1		09/09/16 20:27	
Chlorosophara	ND	ug/L	1.0		1			
Chloromethane	ND	ug/L	1.0		1		09/09/16 20:27	
Cyclohexane	ND	ug/L	10		1		09/09/16 20:27	
1,2-Dibromo-3-Chloropropane	ND	ug/L	10		1		09/09/16 20:27	
Dibromochloromethane	ND	ug/L	1.0		1		09/09/16 20:27	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0		1		09/09/16 20:27	
1,2-Dichlorobenzene	ND	ug/L	1.0		1		09/09/16 20:27	
1,3-Dichlorobenzene	ND	ug/L	1.0		1		09/09/16 20:27	
Dichlorodifluoromethane	ND	ug/L	1.0		1		09/09/16 20:27	
1,4-Dichlorobenzene	ND	ug/L	1.0		1		09/09/16 20:27	
1,1-Dichloroethane	ND	ug/L 	1.0		1	09/09/16		
1,2-Dichloroethane	ND	ug/L	1.0		1		09/09/16 20:27	
cis-1,2-Dichloroethene	ND	ug/L	1.0		1	09/09/16		
1,1-Dichloroethene	ND	ug/L	1.0		1		09/09/16 20:27	
1,2-Dichloropropane	ND	ug/L	1.0		1		09/09/16 20:27	
cis-1,3-Dichloropropene	ND	ug/L	1.0		1		09/09/16 20:27	
trans-1,3-Dichloropropene	ND	ug/L	1.0		1		09/09/16 20:27	
trans-1,2-Dichloroethene	ND	ug/L	1.0		1	09/09/16	09/09/16 20:27	1011
Ethylbenzene	ND	ug/L	1.0		1	09/09/16	09/09/16 20:27	1011

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090718

Icor Ltd., Middleburg, VA

September 14, 2016

Sample ID: M1Hpt-08-GW(37-40)		Date/Tim	e Sampled:	09/06/20	16 13:30	PSS Sample	e ID: 16090718	3-012
Matrix: GROUND WATER		Date/Time	e Received:	09/07/20	16 13:35			
TCL Volatile Organic Compounds	Analytica	l Method:	SW-846 8260	В		Preparation Meth	nod: 5030B	
ρH=4	Decult	l lmita	DI	Class	Dil	Duamanad	A made mad	Analyst
	Result	Units	RL 10	Flag		Prepared 09/09/16		Analyst 1011
2-Hexanone	ND	ug/L	10		1		09/09/16 20:27	
Isopropylbenzene	ND	ug/L	1.0		1		09/09/16 20:27	
Methyl Acetate	ND	ug/L	10		1	09/09/16	09/09/16 20:27	
Methylcyclohexane	ND	ug/L	10		1		09/09/16 20:27	
Methylene Chloride	ND	ug/L	1.0		1	09/09/16	09/09/16 20:27	1011
4-Methyl-2-Pentanone	ND	ug/L	5.0		1	09/09/16	09/09/16 20:27	1011
Methyl-t-butyl ether	ND	ug/L	1.0		1	09/09/16	09/09/16 20:27	1011
Naphthalene	ND	ug/L	1.0		1	09/09/16	09/09/16 20:27	1011
Styrene	ND	ug/L	1.0		1	09/09/16	09/09/16 20:27	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	09/09/16	09/09/16 20:27	1011
Tetrachloroethene	ND	ug/L	1.0		1	09/09/16	09/09/16 20:27	1011
Toluene	ND	ug/L	1.0		1	09/09/16	09/09/16 20:27	1011
1,2,3-Trichlorobenzene	ND	ug/L	1.0		1	09/09/16	09/09/16 20:27	1011
1,2,4-Trichlorobenzene	ND	ug/L	1.0		1	09/09/16	09/09/16 20:27	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	09/09/16	09/09/16 20:27	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	09/09/16	09/09/16 20:27	1011
Trichloroethene	ND	ug/L	1.0		1	09/09/16	09/09/16 20:27	1011
Trichlorofluoromethane	ND	ug/L	5.0		1	09/09/16	09/09/16 20:27	1011
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	ug/L	1.0		1	09/09/16	09/09/16 20:27	1011
Vinyl Chloride	ND	ug/L	1.0		1	09/09/16	09/09/16 20:27	1011
m,p-Xylenes	ND	ug/L	2.0		1	09/09/16	09/09/16 20:27	1011
o-Xylene	ND	ug/L	1.0		1	09/09/16	09/09/16 20:27	1011



Case Narrative Summary

Client Name: Icor Ltd.

Project Name: Robinson Terminal North

Work Order Number(s): 16090718

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

The analyses of chlorine, pH, dissolved oxygen, temperature and sulfite for drinking water and non-potable samples tested for compliance have a maximum holding time of 15 minutes. As such, all laboratory analyses for these analytes exceed holding times.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

All sample receipt conditions were acceptable.

Analytical:

RCRA Metals

Batch: 135683

Matrix spike and/or matrix spike duplicate (MS/MSD) exceedances identified; see MS summary form.

TCL Volatile Organic Compounds

Batch: 135708

Surrogate exceedances identified; see surrogate summary form.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.



Analytical Data Package Information Summary

Work Order(s): 16090718

Report Prepared For: Icor Ltd., Middleburg, VA Project Name: Robinson Terminal North Project Manager: Mike Bruzzesi

Method	Client Sample Id	Analysis Type	Lab Sample Id	Analyst	Mtx	Prep Batch	Analytical Batch	Sampled	Prepared	Analyzed
ASTM D2216 05	MIHpt-03(1-2) MIHpt-04(1-2) MIHpt-04(4-5) MIHpt-06(1-2) MIHpt-06(1-2) MIHpt-07(1-2) MIHpt-07(7-8) MIHpt-08(4-5) MIHpt-08(4-5) MIHpt-08(4-5) MIHpt-08(4-5)	Initial	16090718-001 16090718-002 16090718-003 16090718-005 16090718-005 16090718-007 16090718-009 16090718-009 16090718-010	1057 1057 1057 1057 1057 1057 1057 1057	~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~	135584 135584 135584 135584 135584 135584 135584 135584 135584	135584 135584 135584 135584 135584 135584 135584 135584 135584	09/06/2016 09/06/2016 09/06/2016 09/06/2016 09/06/2016 09/06/2016 09/06/2016 09/06/2016	09/07/2016 16:50 09/07/2016 16:50 09/07/2016 16:50 09/07/2016 16:50 09/07/2016 16:50 09/07/2016 16:50 09/07/2016 16:50 09/07/2016 16:50 09/07/2016 16:50 09/07/2016 16:50	09/07/2016 16:50 09/07/2016 16:50 09/07/2016 16:50 09/07/2016 16:50 09/07/2016 16:50 09/07/2016 16:50 09/07/2016 16:50 09/07/2016 16:50 09/07/2016 16:50
SW-846 6020 A	MIHpt-03(4-5) MIHpt-07(1-2) 62458-1-BKS 62458-1-BLK MIHpt-03(1-2) S MIHpt-03(1-2) SD MIHpt-04(4-5)	Initial Initial BKS BLK MS MSD Reanalysis	16090718-002 16090718-007 62458-1-BKS 62458-1-BLK 16090718-001 S 16090718-004	1033 1033 1033 1033 1033	S S S S S S	62458 62458 62458 62458 62458 62458	135683 135683 135683 135683 135683	09/06/2016 09/06/2016 09/06/2016 09/06/2016	09/08/2016 16:43 09/08/2016 16:43 09/08/2016 16:43 09/08/2016 16:43 09/08/2016 16:43 09/08/2016 16:43	09/09/2016 19:40 09/09/2016 20:39 09/09/2016 19:01 09/09/2016 18:54 09/09/2016 19:14 09/09/2016 19:20
SW-846 6020 A	M1Hpt-03(1-2) M1Hpt-04(1-2) M1Hpt-06(1-2) M1Hpt-06(4-5) M1Hpt-06(4-5)	Initial Initial Initial Initial Reanalysis	16090718-001 16090718-003 16090718-005 16090718-006	1033 1033 1033 1033	× × × × ×	62458 62458 62458 62458 62458	135683 135683 135683 135683	09/06/2016 09/06/2016 09/06/2016 09/06/2016	09/08/2016 16:43 09/08/2016 16:43 09/08/2016 16:43 09/08/2016 16:43 09/08/2016 16:43	09/09/2016 19:07 09/09/2016 19:46 09/09/2016 20:26 09/09/2016 20:32 09/12/2016 14:28
SW-846 8015 C	MIHpt-07(7-8) MIHpt-08(4-5) MIHpt-08(37.8-38.8) MIHpt-10(24.5-25.5) 62496-1-BKS	Initial Initial Initial BKS	16090718-008 16090718-009 16090718-010 16090718-011 62496-1-BKS	1045 1045 1045 1045 1045	8 8 8 8 8	62496 62496 62496 62496 62496	135735 135735 135735 135735 135735	09/06/2016 09/06/2016 09/06/2016 	09/12/2016 11:32 09/12/2016 11:32 09/12/2016 11:32 09/12/2016 11:32	09/14/2016 00:43 09/14/2016 01:08 09/14/2016 01:08 09/14/2016 01:33 09/13/2016 12:08

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Version 1.000



Analytical Data Package Information Summary

Work Order(s): 16090718

Report Prepared For: Icor Ltd., Middleburg, VA Project Name: Robinson Terminal North Project Manager: Mike Bruzzesi

SW-846 8015 C G2496-1-BLK BLK G2496-1-BLK 1045 S G2496 135733	Method	Client Sample Id	Analysis Type	Lab Sample Id	Analyst	Mtx	Prep Batch	Analytical Batch	Sampled	Prepared	Analyzed
C4940-1-BLA DLN C4240-1-BLA 1045 S C4249 135735 C4249-1-BLA MSD 16090716-001 1045 S 62496 135735 Disposal SD MSD 16090716-001 1045 S 62496 135735 Disposal SD MSD 16090716-001 1045 S 62496 135735 MIHPt-08-CW(37-40) Initial 16090718-012 1035 W 62446 135586 Sys Eff S MSD 16090718-009 1035 W 62446 135586 Sys Eff S MSD 16090718-009 1035 S 62454 135613 MIHPt-07(7-4) Initial 16090718-009 1035 S 62454 135613 MIHPt-08(4-5) Initial 16090718-009 1035 S 62454 135613 MIHPt-08(4-5) Initial 16090718-009 1035 S 62454 135613 MIHPt-08(4-5) Initial 16090718-009 1035 S 62	C A POO NO AND	A1d 1 20102	7 10	71 Id 1 20102	1045	٥	2000	105775		00/11/00/01/00	00/12/2016 11:41
62496-1-181D HSD 62496-1-BSD 1043 S 62496 135735 Disposal S MSD 16090716-001 SD 1045 S 62496 135735 Disposal SD MSD 16090716-001 SD 1045 S 62496 135735 MIHPH-08-GW(37-40) Initial 16090718-012 1035 W 62446 135586 Sys Eff SD MSD 16090721-001 SD 1035 W 62446 135586 Sys Eff SD MSD 16090718-008 1035 W 62446 135586 Sys Eff SD MSD 16090718-009 1035 W 62446 135586 MIHPt-08(4-5) SD Initial 16090718-010 1035 S 62454 135613 MIHPt-08(4-5) SD Initial 16090718-011 1035 S 62454 135613 MIHPt-08(4-5) SD MSD 16090718-010 1035 S 62454 135613 MIHPt-08(4-5) SD MSD 16090718-010 1035 S	SW-846 8015 C	02490-1-BLN	BLN	02490-1-BLN	1043	o (02490	55/551		09/12/2010 11:32	09/13/2010 11:41
Disposal S MS 16090716-001S 1045 S 62496 135735 Disposal SD MSD 16090716-001S 1045 S 62496 135735 Disposal SD MSD 16090716-001S 1045 S 62496 135735 Octave-2-BKS BKS 62446-2-BKS 1035 W 62446 135586 62446-2-BKS MS 16090718-012 1035 W 62446 135586 S 62446-2-BK S MS 16090712-001S 1035 W 62446 135586 S 8 62446-2-BK S MS 16090718-010 1035 S 62454 135613 Dinital 16090718-010 1035 S 62454 135613 DINITAL-08(4-5) Dinital 16090718-010 1035 S 62454 135613 DINITAL-08(4-5) DINITAL 16090718-010 1035 S 62454 135613 DINITAL 16090718-010 DINITAL 16090718-01		62496-1-BSD	BSD	62496-1-BSD	1045	S	62496	135735		09/12/2016 11:32	09/13/2016 12:41
Disposal SD MSD 16090716-001 SD 1045 S 6246 135735 M1Hpt-08-GW(37-40) Initial 16090718-012 1035 W 62446 135586 62446-2-BKS BKS 62446-2-BKS 1035 W 62446 135586 62446-2-BK BK 62446-2-BK 1035 W 62446 135586 Sys Eff SD MSD 16090721-001 SD 1035 W 62446 135586 Sys Eff SD MSD 16090718-001 SD 1035 S 62446 135613 M1Hpt-07(7-8) Initial 16090718-010 SD 1035 S 62434 135613 M1Hpt-08(4-5) Initial 16090718-010 SD 1035 S 62434 135613 M1Hpt-08(4-5) SD MS 62454-2-BKS 1035 S 62434 135613 M1Hpt-08(4-5) SD MSD 16090718-010 SD 1035 S 62434 135613 M1Hpt-08(4-5) SD MSD 16090718-010 SD 1035 S<		Disposal S	MS		1045	S	62496	135735	09/06/2016	09/12/2016 11:32	09/13/2016 14:16
MHPp-08-GW(37-40) Initial 16090718-012 1035 W 62446 13586 62446-2-BKS BKS 62446-2-BKS 1035 W 62446 13586 62446-2-BKS BKS 62446-2-BK 1035 W 62446 13586 Sys Eff SD MSD 16090721-001 SD 1035 W 62446 13586 MHPp-07(7-8) Initial 16090718-008 1035 S 62454 135613 MHPp-08(4-5) Initial 16090718-009 1035 S 62454 135613 MHPp-08(4-5) Initial 16090718-019 1035 S 62454 135613 MHPp-08(4-5) SD Mithpr-08(4-5) SD MS 62454-2-BKS 1035 S 62454 135613 MHPp-08(4-5) SD MS 16090718-009 SD 1035 S 62454 135613 MHPp-08(4-5) SD MS 16090718-009 SD 1035 S 62454 135613 MHPp-08(4-5) SD MS 62494-1-BKS 10		Disposal SD	MSD	16090716-001 SD	1045	S	62496	135735	09/06/2016	09/12/2016 11:32	09/13/2016 14:44
62446-2-BKS BKS 62446-2-BKS 1035 W 62446 13586 62446-2-BLK BLK 62446-2-BLK 1035 W 62446 13586 Sys Eff S MS 16090721-001 SD 1035 W 62446 13586 Sys Eff SD MSD 16090712-001 SD 1035 W 62446 13586 MHHpt-07(7-8) Initial 16090718-009 1035 S 62454 135613 MHHpt-07(7-8) Initial 16090718-010 1035 S 62454 135613 MHHpt-010(34-5-25.5) Initial 16090718-010 1035 S 62454 135613 MHHpt-08(4-5) SD MS 62454-2-BKS 1035 S 62454 135613 MHHpt-08(4-5) SD MS 16090718-019 1035 S 62454 135613 MHHpt-08(4-5) SD MS 16090718-009 1011 W 62494 13568 MHHpt-08(4-5) SD MS 16090718-009 1011 W <	SW-846 8015C	M1Hpt-08-GW(37-40)	Initial	16090718-012	1035	\bowtie	62446	135586	09/06/2016	09/07/2016 14:34	09/07/2016 20:35
62446-2-BLK BLK 62446-2-BLK 1035 W 62446 135586 Sys Eff SD MSD 16090721-001 SD 1035 W 62446 135586 Sys Eff SD MSD 16090721-001 SD 1035 S 62446 135586 MHPt-07(7-8) Initial 16090718-009 1035 S 62454 135613 MHPt-08(37.8-38.8) Initial 16090718-010 1035 S 62454 135613 MHPt-10(24.5-25.5) Initial 16090718-010 1035 S 62454 135613 MHPt-08(37.8-38.8) Initial 16090718-010 1035 S 62454 135613 MHPt-08(4-5) SD MSD 16090718-019 1035 S 62454 135613 MHHpt-08(4-5) SD MSD 16090718-019 1035 S 62454 135686 MHPt-08(4-5) SD MSD 16090718-015 1011 W 62494 135686 MW-1 SD MSD 16090718-016 1011 W		62446-2-BKS	BKS	62446-2-BKS	1035	×	62446	135586		09/07/2016 14:34	09/07/2016 17:37
Sys Eff S MS 16090721-001 SI 1035 W 62446 135586 Sys Eff SD MSD 160907121-001 SD 1035 W 62446 135586 MIHpt-07(7-8) Initial 16090718-008 1035 S 62454 135613 MIHpt-08(4-5) Initial 16090718-010 1035 S 62454 135613 MIHpt-08(4-5) Initial 16090718-010 1035 S 62454 135613 MIHpt-08(4-5) BKS 62454-2-BKS 1035 S 62454 135613 MIHpt-08(4-5) BKS 62454-2-BKS 1035 S 62454 135613 MIHpt-08-GW(4-5) MS 16090718-009 1035 S 62454 135613 MIHpt-08-GW(4-5) MS 16090718-009 1035 S 62454 135613 MIHpt-08-GW(37-40) Initial 16090718-009 1035 S 62454 135613 MW-1 SD MSD 16090718-009 1011 W		62446-2-BLK	BLK	62446-2-BLK	1035	×	62446	135586		09/07/2016 14:34	09/07/2016 17:12
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M1Hpt-08(4-5) Initial 16090718-009 1035 S 62454 135613 M1Hpt-08(37.8-38.8) Initial 16090718-010 1035 S 62454 135613 M1Hpt-08(37.8-38.8) Initial 16090718-011 1035 S 62454 135613 62454-2-BKS BKS 62454-2-BKS 1035 S 62454 135613 M1Hpt-08(4-5) SD MS 16090718-009 SD 1035 S 62454 135613 M1Hpt-08(4-5) SD MSD 16090718-009 SD 1035 S 62454 135613 M1Hpt-08(4-5) SD MSD 16090718-012 1011 W 62494 135613 M1Hpt-08(4-5) SD MS 624941-BKS 1011 W 62494 135686 624941-BKS BKS 624941-BKS 1011 W 62494 135686 MW-1 SD MS 16090718-010 SD 1011 W 62494 135686 MIHpt-08(4-5) MS 16090718-001 SD 1011 S		M1Hpt-07(7-8)	Initial	16090718-008	1035	S	62454	135613	09/06/2016	09/08/2016 07:55	09/08/2016 16:00
MIHpt-08(37.8-38.8) Initial 16090718-010 1035 S 62454 135613 MIHpt-10(24.5-25.5) Initial 16090718-011 1035 S 62454 135613 62454-2-BKS BKS 62454-2-BKS 1035 S 62454 135613 MIHpt-08(4-5) SD MS 16090718-009 SD 1035 S 62454 135613 MIHpt-08(4-5) SD MSD 16090718-009 SD 1035 S 62454 135613 MIHpt-08(4-5) SD MSD 16090718-009 SD 1011 W 62494 135613 MIHpt-08(4-5) SD MSD 62494-1-BKS 1011 W 62494 135613 MW-1 SD MSD 62494-1-BKS 1011 W 62494 135686 MW-1 SD MSD 16090710-001 SD 1011 W 62494 135686 MIHpt-07(7-8) Initial 16090718-009 1011 S 62514 135708 MIHpt-10(24.5-25.5) Initial 16090718-010 1011		M1Hpt-08(4-5)	Initial	16090718-009	1035	S	62454	135613	09/06/2016	09/08/2016 07:55	09/08/2016 14:28
MIHpt-10(24.5-25.5) Initial 16090718-011 1035 S 62454 135613 62454-2-BKS BKS 62454-2-BKS 1035 S 62454 135613 62454-2-BKS BKS 62454-2-BKS 1035 S 62454 135613 MIHpt-08(4-5) SD MSD 16090718-009 SD 1035 S 62454 135613 MIHpt-08(4-5) SD MSD 16090718-012 1011 W 62494 135685 62494-1-BKS BKS 62494-1-BKS 1011 W 62494 135686 MW-1 SD MSD 16090710-001 SD 1011 W 62494 135686 MW-1 SD MSD 16090710-001 SD 1011 S 62494 135708 MIHpt-08(4-5) Initial 16090718-010 1011 S 62514 135708 MIHpt-10(24.5-25.5) Initial 16090718-010 1011 S 62514 135708 62514-1-BKS BKS 62514-1-BKS 1011 S		M1Hpt-08(37.8-38.8)	Initial	16090718-010	1035	S	62454	135613	09/06/2016	09/08/2016 07:55	09/08/2016 14:59
62454-2-BKS BKS 62454-2-BKS 1035 S 62454 135613 62454-2-BLK BLK 62454-2-BLK 1035 S 62454 135613 MIHpt-08(4-5) S MS 16090718-009 S 1035 S 62454 135613 MIHpt-08(4-5) SD MSD 16090718-009 SD 1035 S 62454 135613 MIHpt-08(4-5) SD MSD 16090718-012 1011 W 62494 135686 62494-1-BKS BKS 62494-1-BKS 1011 W 62494 135686 MWv-1 SD MSD 16090710-001 SD 1011 W 62494 135686 MWv-1 SD MSD 16090718-009 1011 S 62514 135708 MIHpt-08(4-5) Initial 16090718-010 1011 S 62514 135708 MIHpt-10(24.5-25.5) Initial 16090718-011 1011 S 62514 135708 62514-1-BKS BKS 62514-1-BKS 1011 S 625		M1Hpt-10(24.5-25.5)	Initial	16090718-011	1035	S	62454	135613	09/06/2016	09/08/2016 07:55	09/08/2016 15:30
62454-2-BLK BLK 62454-2-BLK 1035 S 62454 135613 MIHpt-08(4-5) SD MS 16090718-009 SD 1035 S 62454 135613 MIHpt-08(4-5) SD MSD 16090718-009 SD 1035 S 62454 135613 MIHpt-08-GW(37-40) Initial 16090718-012 1011 W 62494 135686 62494-1-BKS BKS 62494-1-BKS 1011 W 62494 135686 MW-1 SD MSD 16090710-001 SD 1011 W 62494 135686 MW-1 SD MSD 16090718-008 SD 1011 W 62494 135708 MIHpt-08(7-8) Initial 16090718-009 SD 1011 S 62514 135708 MIHpt-08(37.8-38.8) Initial 16090718-011 1011 S 62514 135708 MIHpt-10(24.5-25.5) Initial 16090718-011 1011 S 62514 135708 62514-1-BKS BKS 62514-1-BKK 1011 <		62454-2-BKS	BKS	62454-2-BKS	1035	S	62454	135613	!	09/08/2016 07:55	09/08/2016 11:57
M1Hpt-08(4-5) S MS 16090718-009 S 1035 S 62454 135613 M1Hpt-08(4-5) SD MSD 16090718-009 SD 1035 S 62454 135613 M1Hpt-08(4-5) SD MSD 16090718-012 1011 W 62494 135686 62494-1-BKS BKS 62494-1-BKS 1011 W 62494 135686 MW-1 SD MSD 16090710-001 SD 1011 W 62494 135686 MW-1 SD MSD 16090718-008 1011 W 62494 135708 MIHpt-07(7-8) Initial 16090718-009 1011 S 62514 135708 M1Hpt-08(4-5) Initial 16090718-010 1011 S 62514 135708 M1Hpt-10(24.5-25.5) Initial 16090718-011 1011 S 62514 135708 62514-1-BKS BKS 62514-1-BKS 1011 S 62514 135708		62454-2-BLK	BLK	62454-2-BLK	1035	S	62454	135613		09/08/2016 07:55	09/08/2016 10:25
M1Hpt-08(4-5) SD MSD 16090718-019 SD 1035 S 62454 135685 M1Hpt-08-GW(37-40) Initial 16090718-012 1011 W 62494 135686 62494-1-BKS BKS 62494-1-BKS 1011 W 62494 135686 62494-1-BKS BK 62494-1-BLK 1011 W 62494 135686 MW-1 SD MSD 16090710-001 SD 1011 W 62494 135686 MIHpt-07(7-8) Initial 16090718-008 1011 S 62514 135708 M1Hpt-08(4-5) Initial 16090718-010 1011 S 62514 135708 M1Hpt-10(24.5-25.5) Initial 16090718-011 1011 S 62514 135708 62514-1-BKS BKS 62514-1-BKS 1011 S 62514 135708		M1Hpt-08(4-5) S	MS	16090718-009 S	1035	S	62454	135613	09/06/2016	09/08/2016 07:55	09/08/2016 16:30
MIHpt-08-GW(37-40) Initial 16090718-012 1011 W 62494 135686 62494-1-BKS BKS 62494-1-BKS 1011 W 62494 135686 62494-1-BLK BLK 62494-1-BLK 1011 W 62494 135686 MW-1 SD MSD 16090710-001 SD 1011 W 62494 135686 MW-1 SD MSD 16090718-009 1011 S 62514 135708 MIHpt-08(4-5) Initial 16090718-009 1011 S 62514 135708 MIHpt-10(24.5-25.5) Initial 16090718-010 1011 S 62514 135708 MIHpt-1-BKS BKS 62514-1-BKS 1011 S 62514 135708 62514-1-BKS BK 62514-1-BK 1011 S 62514 135708		M1Hpt-08(4-5) SD	MSD	16090718-009 SD	1035	S	62454	135613	09/06/2016	09/08/2016 07:55	09/08/2016 17:00
BKS 62494-1-BKS 1011 W 62494 135686 BLK 62494-1-BLK 1011 W 62494 135686 MSD 16090710-001 SD 1011 W 62494 135686 MSD 16090710-001 SD 1011 W 62494 135686 Initial 16090718-008 1011 S 62514 135708 S-38.8) Initial 16090718-010 1011 S 62514 135708 S-25.5) Initial 16090718-011 1011 S 62514 135708 BKS 62514-1-BKS 1011 S 62514 135708 BLK 62514-1-BLK 1011 S 62514 135708	SW-846 8260 B	M1Hpt-08-GW(37-40)	Initial	16090718-012	1011	×	62494	135686	09/06/2016	09/09/2016 10:31	09/09/2016 20:27
BLK 62494-1-BLK 1011 W 62494 135686 MS 16090710-001 SD 1011 W 62494 135686 MSD 16090710-001 SD 1011 W 62494 135686 MSD 16090718-008 1011 S 62514 135708 MSD 16090718-010 1011 S 62514 135708 MS-38.8) Initial 16090718-010 1011 S 62514 135708 MSS 62514-1-BKS 1011 S 62514 135708 BLK 62514-1-BLK 1011 S 62514 135708		62494-1-BKS	BKS	62494-1-BKS	1011	A	62494	135686		09/09/2016 10:31	09/09/2016 11:28
MSD 16090710-001 S 1011 W 62494 135686 MSD 16090710-001 SD 1011 W 62494 135686 Initial 16090718-008 1011 S 62514 135708 S-38.8) Initial 16090718-010 1011 S 62514 135708 S-25.5) Initial 16090718-011 1011 S 62514 135708 BKS 62514-1-BKS 1011 S 62514 135708 BLK 62514-1-BLK 1011 S 62514 135708		62494-1-BLK	BLK	62494-1-BLK	1011	×	62494	135686		09/09/2016 10:31	09/09/2016 12:10
MSD 16090710-001 SD 1011 W 62494 135686 13514 16090718-008 1011 S 62514 135708 135708		MW-1 S	MS	16090710-001 S	1011	×	62494	135686	09/06/2016	09/09/2016 10:31	09/09/2016 17:35
) Initial 16090718-008 1011 S 62514 135708 8-38.8) Initial 16090718-010 1011 S 62514 135708 5-25.5) Initial 16090718-011 1011 S 62514 135708 BKS 62514-1-BKS 1011 S 62514 135708 BLK 62514-1-BLK 1011 S 62514 135708		MW-1 SD	MSD	16090710-001 SD	1011	A	62494	135686	09/06/2016	09/09/2016 10:31	09/09/2016 17:57
) Initial 16090718-009 1011 S 62514 135708 8-38.8) Initial 16090718-010 1011 S 62514 135708 5-25.5) Initial 16090718-011 1011 S 62514 135708 BKS 62514-1-BKS 1011 S 62514 135708 BLK 62514-1-BLK 1011 S 62514 135708		M1Hpt-07(7-8)	Initial	16090718-008	1011	S	62514	135708	09/06/2016	09/12/2016 10:24	09/12/2016 19:29
8-38.8) Initial 16090718-010 1011 S 62514 135708 5-25.5) Initial 16090718-011 1011 S 62514 135708 BKS 62514-1-BKS 1011 S 62514 135708 BLK 62514-1-BLK 1011 S 62514 135708		M1Hpt-08(4-5)	Initial	16090718-009	1011	S	62514	135708	09/06/2016	09/12/2016 10:24	09/12/2016 16:49
5-25.5) Initial 16090718-011 1011 S 62514 135708 BKS 62514-1-BKS 1011 S 62514 135708 BLK 62514-1-BLK 1011 S 62514 135708		M1Hpt-08(37.8-38.8)	Initial	16090718-010	1011	S	62514	135708	09/06/2016	09/12/2016 10:24	09/12/2016 17:29
BKS 62514-1-BKS 1011 S 62514 135708 BLK 62514-1-BLK 1011 S 62514 135708		M1Hpt-10(24.5-25.5)	Initial	16090718-011	1011	S	62514	135708	09/06/2016	09/12/2016 10:24	09/12/2016 18:09
BLK 62514-1-BLK 1011 S 62514		62514-1-BKS	BKS	62514-1-BKS	1011	S	62514	135708		09/12/2016 10:24	09/12/2016 13:27
		62514-1-BLK	BLK	62514-1-BLK	1011	N N	62514	135708		09/12/2016 10:24	09/12/2016 14:06

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Analytical Data Package Information Summary

Work Order(s): 16090718
Report Prepared For: Icor Ltd., Middleburg, VA
Project Name: Robinson Terminal North
Project Manager: Mike Bruzzesi

Method	Client Sample Id Analysis Type Lab Sample Id Analyst Mtx Prep Batch Analytical Batch Sampled	Analysis Type	Lab Sample Id	Analyst	Mtx	Prep Batch	Analytical Batch	Sampled	Prepared	Analyzed
SW-846 8260 B	NEBBC-74, 75 S	MS	16090830-002 S	1011	S	62514	135708	08/31/2016	09/12/2016 10:24	09/12/2016 15:30
	NEBBC-74, 75 SD	MSD	16090830-002 SD	1011	S	62514	135708	08/31/2016	09/12/2016 10:24	09/12/2016 16:10
SW-846 8270 C	M1Hpt-08(37.8-38.8)	Initial	16090718-010	1055	S	62444	135647	09/06/2016	09/08/2016 08:51	09/08/2016 18:04
	M1Hpt-10(24.5-25.5)	Initial	16090718-011	1055	S	62444	135647	09/06/2016	09/08/2016 08:51	09/08/2016 20:53
	62444-1-BKS	BKS	62444-1-BKS	1055	S	62444	135647	!	09/08/2016 08:51	09/08/2016 15:43
	62444-1-BLK	BLK	62444-1-BLK	1055	S	62444	135647		09/08/2016 08:51	09/08/2016 15:15
	62444-1-BSD	BSD	62444-1-BSD	1055	S	62444	135647	!	09/08/2016 08:51	09/08/2016 16:11
	1615-03 S	MS	16090805-001 S	1055	S	62444	135647	09/07/2016	09/08/2016 08:51	09/08/2016 16:39
	1615-03 SD	MSD	16090805-001 SD	1055	S	62444	135647	09/07/2016	09/08/2016 08:51	09/08/2016 17:07
	M1Hpt-10(24.5-25.5)	Reanalysis	16090718-011	1055	S	62444	135647	09/06/2016	09/08/2016 08:51	09/09/2016 13:11

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PHASE SEPARATION SCIENCE, INC. QC Summary 16090718

Icor Ltd. Robinson Terminal North

Analytical Method Seq Number: PSS Sample ID:	1: SW-846 8015 C 135735 16090718-008		Matrix: Soil		Prep Method Date Prep	
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
o-Terphenyl		74		34-133	%	09/14/16 00:43
Analytical Method			Motrice Soil		Prep Method	
Seq Number: PSS Sample ID:	135613 16090718-008		Matrix: Soil		Date Prep	: 09/08/2016
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
a,a,a-Trifluorotolue	ne	93		50-122	%	09/08/16 16:00
Analytical Method Seq Number: PSS Sample ID:	I: SW-846 8260 B 135708 16090718-008		Matrix: Soil		Prep Method Date Prep	
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
4-Bromofluorobenz Dibromofluorometh Toluene-D8		174 93 109	*	82-126 92-113 94-105	% % %	09/12/16 19:29 09/12/16 19:29 09/12/16 19:29
Analytical Method Seq Number: PSS Sample ID:	l: SW-846 8015 C 135735 16090718-009		Matrix: Soil		Prep Method Date Prep	
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
o-Terphenyl		85		34-133	%	09/14/16 01:08
Analytical Method					Prep Method	
Seq Number: PSS Sample ID:	135613 16090718-009		Matrix: Soil		Date Prep	: 09/08/2016
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
a,a,a-Trifluorotolue	ne	95		50-122	%	09/08/16 14:28

PHASE SEPARATION SCIENCE, INC. QC Summary 16090718

Icor Ltd. Robinson Terminal North

		•					
Analytical Method:	: SW-846 8260 B					Prep Method:	SW5035
Seq Number:	135708		Matrix:	Soil		Date Prep:	
PSS Sample ID:	16090718-009					·	
•		%Rec	Flag		Limits	Units	Analysis
Surrogate		701100	i iug		Lillits	Omics	Date
4-Bromofluorobenze	ene	110			82-126	%	09/12/16 16:49
Dibromofluorometha	ane	98			92-113	%	09/12/16 16:49
Toluene-D8		98			94-105	%	09/12/16 16:49
Analytical Method:						Prep Method:	
Seq Number:	135647		Matrix:	Soil		Date Prep:	09/08/2016
PSS Sample ID:	16090718-010						
Surrogate		%Rec	Flag		Limits	Units	Analysis Date
2-Fluorobiphenyl		75			32-107	%	09/08/16 18:04
2-Fluorophenol		72			34-113	%	09/08/16 18:04
Nitrobenzene-d5		78			35-123	%	09/08/16 18:04
Phenol-d6		75			34-120	%	09/08/16 18:04
Terphenyl-D14		90			46-154	%	09/08/16 18:04
2,4,6-Tribromophen	nol	80			31-113	%	09/08/16 18:04
Z,+,0 imbiomophem	ioi	00			01110	70	03/00/10 10:04
Analytical Method:	: SW-846 8015 C					Prep Method:	SW3550C
Seq Number:	135735		Matrix:	Soil		Date Prep:	09/12/2016
PSS Sample ID:	16090718-010						
Surrogate		%Rec	Flag		Limits	Units	Analysis Date
o-Terphenyl		70			34-133	%	09/14/16 01:08
A I . C I . A	OW 040 00450					D 44 11 1	CMEOOO
Analytical Method:			B.4 - 4	0 - 11		Prep Method:	
Seq Number:	135613		Matrix:	5011		Date Prep:	09/08/2016
PSS Sample ID:	16090718-010						
Surrogate		%Rec	Flag		Limits	Units	Analysis Date
a,a,a-Trifluorotoluer	ne	92			50-122	%	09/08/16 14:59
Analytical Method:						Prep Method:	
Seq Number:	135708		Matrix:	Soil		Date Prep:	09/12/2016
PSS Sample ID:	16090718-010						
Surrogate		%Rec	Flag		Limits	Units	Analysis Date
4-Bromofluorobenze	ene	119			82-126	%	09/12/16 17:29
Dibromofluorometha		98			92-113	%	09/12/16 17:29
Toluene-D8	-	97			94-105	%	09/12/16 17:29
. 0.00.10 00		٠.			5. 100	, •	20,, 10 11.20

PHASE SEPARATION SCIENCE, INC. QC Summary 16090718

Icor Ltd. Robinson Terminal North

		•		Tommar Horar		
Analytical Method	SW-846 8270 C				Prep Method:	SW3550C
Seq Number:	135647		Matrix:	Soil	Date Prep:	
•			ivialiti.	3011	Date Frep.	09/06/2010
PSS Sample ID:	16090718-011					
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
2-Fluorobiphenyl		80		32-107	%	09/08/16 20:53
2-Fluorophenol		68		34-113		09/08/16 20:53
Nitrobenzene-d5		72		35-123		09/08/16 20:53
Phenol-d6		73		34-120		09/08/16 20:53
Terphenyl-D14		122		46-154		09/08/16 20:53
	a d	84		31-113	% %	09/08/16 20:53
2,4,6-Tribromopher	IOI	04		31-113	70	09/06/10 20.33
Analytical Method					Prep Method:	
Seq Number:	135735		Matrix:	Soil	Date Prep:	09/12/2016
PSS Sample ID:	16090718-011					
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
o-Terphenyl		83		34-133	%	09/14/16 01:33
Analytical Method	: SW-846 8015C				Prep Method:	SW5030
Seq Number:	135613		Matrix:	Soil	Date Prep:	
•			Widdi)	30	Bato i rop.	00/00/2010
PSS Sample ID:	16090718-011					
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
a,a,a-Trifluorotoluer	ne	94		50-122	%	09/08/16 15:30
Analytical Method	- SW-946 9260 B				Prep Method:	SW5035
-			N 4 = 4 = 1 - 1	0-1	•	
Seq Number: PSS Sample ID:	135708 16090718-011		Matrix:	Soll	Date Prep:	09/12/2016
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
4-Bromofluorobenzo	ene	107		82-126	%	09/12/16 18:09
Dibromofluorometha		96		92-113		09/12/16 18:09
Toluene-D8	anc	97		94-105	%	09/12/16 18:09
Toluene-Do		91		94-103	70	09/12/10 10:03
Analytical Method	: SW-846 8015C				Prep Method:	SW5030B
Seq Number:	135586		Matrix:	Ground Water	Date Prep:	09/07/2016
PSS Sample ID:	16090718-012				·	
, , , , , , , , , , , , , , , , , , ,						
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
a,a,a-Trifluorotoluer	пе	82		55-114	%	09/07/16 20:35

PHASE SEPARATION SCIENCE, INC.

QC Summary 16090718

Icor Ltd. Robinson Terminal North

Analytical Method: SW-846 8260 B

Prep Method: SW5030B Seq Number: 135686 Matrix: Ground Water Date Prep: 09/09/2016

PSS Sample ID: 16090718-012

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	100		86-111	%	09/09/16 20:27
Dibromofluoromethane	101		91-119	%	09/09/16 20:27
Toluene-D8	97		90-117	%	09/09/16 20:27

F = RPD exceeded the laboratory control limits

X = Recovery of MS, MSD or both outside of QC Criteria

H= Recovery of BS,BSD or both exceeded the laboratory control limits L = Recovery of BS,BSD or both below the laboratory control limits

PHASE SEPARATION SCIENCE, INC.

QC Summary 16090718

Icor Ltd. Robinson Terminal North

Analytical Method: SW-846 6020 APrep Method:SW3050BSeq Number:135683Matrix:SolidDate Prep:09/08/16

MB Sample Id: 62458-1-BLK LCS Sample Id: 62458-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Analysis Flag Date
Antimony	<1.996	15.97	17.61	110	80-120	mg/kg	09/09/16 19:01
Arsenic	< 0.3991	15.97	15.99	100	80-120	mg/kg	09/09/16 19:01
Beryllium	<1.996	15.97	16.22	102	80-120	mg/kg	09/09/16 19:01
Cadmium	<1.996	15.97	16.10	101	80-120	mg/kg	09/09/16 19:01
Chromium	<1.996	15.97	17.23	108	80-120	mg/kg	09/09/16 19:01
Copper	<1.996	15.97	16.36	102	80-120	mg/kg	09/09/16 19:01
Lead	<1.996	15.97	16.28	102	80-120	mg/kg	09/09/16 19:01
Mercury	< 0.07983	0.3991	0.3912	98	80-120	mg/kg	09/09/16 19:01
Nickel	<1.996	15.97	15.53	97	80-120	mg/kg	09/09/16 19:01
Selenium	<1.996	15.97	15.93	100	80-120	mg/kg	09/09/16 19:01
Silver	<1.996	15.97	16.48	103	80-120	mg/kg	09/09/16 19:01
Thallium	<1.597	15.97	14.07	88	80-120	mg/kg	09/09/16 19:01
Zinc	<7.983	79.83	75.12	94	80-120	mg/kg	09/09/16 19:01

Analytical Method: SW-846 6020 APrep Method:SW3050BSeq Number:135683Matrix: SoilDate Prep: 09/08/16

Parent Sample Id: 16090718-001 MS Sample Id: 16090718-001 S MSD Sample Id: 16090718-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Antimony	<2.415	19.32	14.90	77	14.27	84	75-125	4	30	mg/kg	09/09/16 19:14	
Arsenic	1.106	19.32	17.46	85	17.31	95	75-125	1	30	mg/kg	09/09/16 19:14	
Beryllium	<2.415	19.32	18.91	98	17.93	105	75-125	5	30	mg/kg	09/09/16 19:14	
Cadmium	<2.415	19.32	18.60	96	18.11	106	75-125	3	30	mg/kg	09/09/16 19:14	
Chromium	5.483	19.32	25.63	104	25.35	116	75-125	1	30	mg/kg	09/09/16 19:14	
Copper	4.194	19.32	22.70	96	23.44	113	75-125	3	30	mg/kg	09/09/16 19:14	
Lead	21.79	19.32	37.50	81	82.80	357	75-125	75	30	mg/kg	09/09/16 19:14	XF
Mercury	< 0.09661	0.4830	0.4975	103	0.4441	104	75-125	11	30	mg/kg	09/09/16 19:14	
Nickel	<2.415	19.32	19.33	100	19.10	112	75-125	1	30	mg/kg	09/09/16 19:14	
Selenium	<2.415	19.32	17.42	90	17.04	100	75-125	2	30	mg/kg	09/09/16 19:14	
Silver	<2.415	19.32	18.80	97	18.12	106	75-125	4	30	mg/kg	09/09/16 19:14	
Thallium	<1.932	19.32	17.50	91	15.77	92	75-125	10	20	mg/kg	09/09/16 19:14	
Zinc	<9.661	96.61	91.01	94	96.17	113	75-125	6	30	ma/ka	09/09/16 19:14	

 Analytical Method: SW-846 8015 C
 Prep Method: SW3550C

 Seq Number:
 135735
 Matrix: Solid
 Date Prep: 09/12/16

 MB Sample Id:
 62496-1-BLK
 LCS Sample Id: 62496-1-BKS
 LCSD Sample Id: 62496-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
TPH-DRO (Diesel Range Organics)	<10.13	33.76	22.15	66	27.80	84	54-123	23	25	mg/kg	09/13/16 12:08	}
Surrogate	MB	MB			LCS	LCS	D LCS		imits	Units	Analysis	

 %Rec
 Flag
 Result
 Flag
 Date

 o-Terphenyl
 78
 83
 100
 34-133
 % 09/13/16 12:08

PHASE SEPARATION SCIENCE, INC.

QC Summary 16090718

Icor Ltd. Robinson Terminal North

 Analytical Method: SW-846 8270 C
 Prep Method: SW3550C

 Seq Number:
 135647
 Matrix: Solid
 Date Prep: 09/08/16

 MB Sample Id:
 62444-1-BLK
 LCS Sample Id: 62444-1-BKS
 LCSD Sample Id: 62444-1-BSD

MB Sample Id: 6	62444-1-BLK		LCS San	nple Id:	62444-1-	BKS		LCSD	Sample	eld: 624	144-1-BSD	
Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Acenaphthene	<166.6	1333	1106	83	1139	86	60-116	3	25	ug/kg	09/08/16 15:43	3
Acenaphthylene	<166.6	1333	1159	87	1186	89	61-112	2	25	ug/kg	09/08/16 15:43	3
Acetophenone	<166.6	1333	1108	83	1137	85	57-114	3	25	ug/kg	09/08/16 15:43	3
Anthracene	<166.6	1333	1173	88	1195	90	66-115	2	25	ug/kg	09/08/16 15:43	3
Atrazine	<166.6	1333	916.4	69	934.8	70	7-109	2	25	ug/kg	09/08/16 15:43	3
Benzo(a)anthracene	<166.6	1333	1264	95	1285	97	71-113	2	25	ug/kg	09/08/16 15:43	3
Benzo(a)pyrene	<166.6	1333	1351	101	1358	102	69-118	1	25	ug/kg	09/08/16 15:43	3
Benzo(b)fluoranthene	<166.6	1333	1375	103	1292	97	65-126	6	25	ug/kg	09/08/16 15:43	3
Benzo(g,h,i)perylene	<166.6	1333	1291	97	1323	99	69-112	2	25	ug/kg	09/08/16 15:43	3
Benzo(k)fluoranthene	<166.6	1333	1275	96	1351	102	57-129	6	25	ug/kg	09/08/16 15:43	3
Biphenyl (Diphenyl)	<166.6	1333	1060	80	1083	81	62-117	2	25	ug/kg	09/08/16 15:43	3
Butyl benzyl phthalate	<166.6	1333	1385	104	1410	106	81-111	2	25	ug/kg	09/08/16 15:43	3
bis(2-chloroethoxy) met	hane <166.6	1333	1066	80	1088	82	56-119	2	25	ug/kg	09/08/16 15:43	3
bis(2-chloroethyl) ether	<166.6	1333	1055	79	1089	82	55-107	3	25	ug/kg	09/08/16 15:43	3
bis(2-chloroisopropyl) e	ther <166.6	1333	1014	76	1032	78	44-103	2	25	ug/kg	09/08/16 15:43	3
bis(2-ethylhexyl) phthala	ate <166.6	1333	1378	103	1400	105	84-109	2	25	ug/kg	09/08/16 15:43	3
4-Bromophenylphenyl e	ther <166.6	1333	1107	83	1140	86	63-125	3	25	ug/kg	09/08/16 15:43	3
Di-n-butyl phthalate	<166.6	1333	1300	98	1320	99	76-110	2	25	ug/kg	09/08/16 15:43	3
Carbazole	<166.6	1333	1259	94	1270	95	58-133	1	25	ug/kg	09/08/16 15:43	3
Caprolactam	<166.6	1333	1224	92	1267	95	51-122	3	25	ug/kg	09/08/16 15:43	3
4-Chloro-3-methyl phen	ol <166.6	1333	1228	92	1267	95	74-119	3	25	ug/kg	09/08/16 15:43	3
4-Chloroaniline	<166.6	1333	1053	79	1074	81	45-107	2	25	ug/kg	09/08/16 15:43	3
2-Chloronaphthalene	<166.6	1333	1058	79	1090	82	56-113	3	25	ug/kg	09/08/16 15:43	3
2-Chlorophenol	<166.6	1333	1088	82	1119	84	59-113	3	25	ug/kg	09/08/16 15:43	3
4-Chlorophenyl Phenyl	ether <166.6	1333	1061	80	1086	82	62-111	2	25	ug/kg	09/08/16 15:43	3
Chrysene	<166.6	1333	1235	93	1252	94	72-114	1	25	ug/kg	09/08/16 15:43	3
Dibenz(a,h)Anthracene	<166.6	1333	1398	105	1426	107	72-110	2	25	ug/kg	09/08/16 15:43	3
Dibenzofuran	<166.6	1333	1117	84	1148	86	62-118	3	25	ug/kg	09/08/16 15:43	3
3,3-Dichlorobenzidine	<166.6	1333	1637	123	1686	127	66-141	3	25	ug/kg	09/08/16 15:43	3
2,4-Dichlorophenol	<166.6	1333	1147	86	1171	88	68-118	2	25	ug/kg	09/08/16 15:43	3
Diethyl phthalate	<166.6	1333	1210	91	1257	94	61-113	4	25	ug/kg	09/08/16 15:43	3
Dimethyl phthalate	<166.6	1333	1205	90	1246	94	69-109	3	25	ug/kg	09/08/16 15:43	3
2,4-Dimethylphenol	<166.6	1333	1100	83	1129	85	57-122	3	25	ug/kg	09/08/16 15:43	3
4,6-Dinitro-2-methyl phe	enol <166.6	1333	1273	95	1332	100	50-134	5	25	ug/kg	09/08/16 15:43	
2,4-Dinitrophenol	<333.2	1333	871.7	65	945.4	71	24-144	8	25	ug/kg	09/08/16 15:43	
2,4-Dinitrotoluene	<166.6	1333	1189	89	1214	91	61-124	2	25	ug/kg	09/08/16 15:43	3
2,6-Dinitrotoluene	<166.6	1333	1193	89	1224	92	59-124	3	25	ug/kg	09/08/16 15:43	3
Fluoranthene	<166.6	1333	1249	94	1267	95	69-119	1	25	ug/kg	09/08/16 15:43	3
Fluorene	<166.6		1142	86	1183	89	65-115	4	25	ug/kg	09/08/16 15:43	3
Hexachlorobenzene	<166.6	1333	1120	84	1138	85	63-118	2	25	ug/kg	09/08/16 15:43	3
Hexachlorobutadiene	<166.6		1041	78	1069	80	55-120	3	25	ug/kg	09/08/16 15:43	
Hexachlorocyclopentad	ene <166.6		1245	93	1294	97		4	25	ug/kg	09/08/16 15:43	3
Hexachloroethane	<166.6		1078	81	1097	82	54-110	2	25	ug/kg	09/08/16 15:43	
Indeno(1,2,3-c,d)Pyrene	<166.6		1267	95	1297	97	60-127	2	25	ug/kg	09/08/16 15:43	
Isophorone	<166.6		1182	89	1212	91	57-116	3	25	ug/kg	09/08/16 15:43	
2-Methylnaphthalene	<166.6		1124	84	1139	86	70-109	1	25	ug/kg	09/08/16 15:43	
2-Methyl phenol	<166.6		1135	85	1174	88	59-118	3	25	ug/kg	09/08/16 15:43	
3&4-Methylphenol	<166.6		1112	83	1152	87	59-113	4	25	ug/kg	09/08/16 15:43	
Naphthalene	<166.6		1047	79	1071	80	59-108	2	25	ug/kg	09/08/16 15:43	
2-Nitroaniline	<166.6		1151	86	1185	89	51-116	3	25	ug/kg	09/08/16 15:43	
3-Nitroaniline	<166.6		1110	83	1149	86		3	25	ug/kg	09/08/16 15:43	
		_	-	_	_	-	-			5 5		

PHASE SEPARATION SCIENCE, INC.

QC Summary 16090718

lcor Ltd. Robinson Terminal North

Analytical Method Seq Number: MB Sample Id:	1: SW-846 8270 C 135647 62444-1-BLK		LCS Sar	Matrix: nple ld:	Solid 62444-1-	BKS			ep Metho Date Pro Sample	ep: 09/	/3550C 08/16 I44-1-BSD	
Parameter	MB Result		LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
4-Nitroaniline	<166.6	1333	1279	96	1310	98	55-125	2	25	ug/kg	09/08/16 15:43	
Nitrobenzene	<166.6	1333	1014	76	1041	78	53-110	3	25	ug/kg	09/08/16 15:43	
2-Nitrophenol	<166.6	1333	1174	88	1221	92	58-124	4	25	ug/kg	09/08/16 15:43	
4-Nitrophenol	<166.6	1333	1236	93	1351	102	51-116	9	25	ug/kg	09/08/16 15:43	
N-Nitrosodi-n-propyl	amine <166.6	1333	1150	86	1172	88	60-98	2	25	ug/kg	09/08/16 15:43	
N-Nitrosodiphenylam	ine <166.6	1333	1159	87	1195	90	65-111	3	25	ug/kg	09/08/16 15:43	
Di-n-octyl phthalate	<166.6	1333	1310	98	1307	98	69-120	0	25	ug/kg	09/08/16 15:43	
Pentachlorophenol	<166.6	1333	1276	96	1312	99	56-124	3	25	ug/kg	09/08/16 15:43	
Phenanthrene	<166.6	1333	1143	86	1170	88	67-117	2	25	ug/kg	09/08/16 15:43	
Phenol	<166.6	1333	1076	81	1107	83	58-114	3	25	ug/kg	09/08/16 15:43	
Pyrene	<166.6	1333	1150	86	1162	87	77-111	1	25	ug/kg	09/08/16 15:43	
Pyridine	<166.6	1333	939	70	957.4	72	37-110	2	25	ug/kg	09/08/16 15:43	
2,4,5-Trichloropheno	<166.6	1333	1234	93	1272	96	64-114	3	25	ug/kg	09/08/16 15:43	
2,4,6-Trichloropheno	<166.6	1333	1161	87	1202	90	60-125	3	25	ug/kg	09/08/16 15:43	
Surrogate	MB %Re	MB c Flag	_		LCS Flag	LCS Resu			imits	Units	Analysis Date	
2-Fluorobiphenyl	86			83		83		32	2-107	%	09/08/16 15:43	

82

85

83

92

93

34-113

35-123

34-120

46-154

31-113

%

%

%

%

09/08/16 15:43

09/08/16 15:43

09/08/16 15:43

09/08/16 15:43

09/08/16 15:43

82

84

82

93

92

2-Fluorophenol

Terphenyl-D14

2,4,6-Tribromophenol

Phenol-d6

Nitrobenzene-d5

94

92

90

91

Analytical Metho Seq Number: MB Sample Id:	d: SW-846 8 135586 62446-2-			LCS San	Matrix: nple Id:			Prep Method Date Prep		/5030B 07/16	
Parameter		MB Result	Spike Amount	LCS Result	LCS %Rec		Limits		Units	Analysis Date	Flag
TPH-GRO (Gasoline R	ange Organic:	<100	5000	4565	91		74-132		ug/L	09/07/16 17:37	
Surrogate		MB %Rec	MB Flag	·	.CS esult	LCS Flag		Limits	Units	Analysis Date	
a,a,a-Trifluorotoluen	е	80		!	90			55-114	%	09/07/16 17:37	7

Analytical Metho Seq Number: MB Sample Id:	d: SW-846 8 135613 62454-2-			LCS San	Matrix:			Prep Meth Date Pr	· ·	5030 08/16	
Parameter		MB Result	Spike Amount	LCS Result	LCS %Rec		Limits		Units	Analysis Date	Flag
TPH-GRO (Gasoline R	ange Organic:	<100	5000	4851	97		75-123		ug/kg	09/08/16 11:57	
Surrogate		MB %Rec	MB Flag		.CS sult	LCS Flag		Limits	Units	Analysis Date	
a,a,a-Trifluorotoluen	е	92		1	10			50-122	%	09/08/16 11:5	7

PHASE SEPARATION SCIENCE, INC.

QC Summary 16090718

Icor Ltd. Robinson Terminal North

Analytical Method	SW-846 8015C		Prep Method:	SW5030
Seq Number:	135613	Matrix: Soil	Date Prep:	09/08/16

Parent Sample Id: 16090718-009 MS Sample Id: 16090718-009 S MSD Sample Id: 16090718-009 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
TPH-GRO (Gasoline Range Organice	256	5767	4460	73	4817	79	31-140	8	30	ua/ka	09/08/16 16:30)

Surrogate MS MS MSD MSD Limits Units Analysis
Result Flag Result Flag Date

a,a,a-Trifluorotoluene 108 110 50-122 % 09/08/16 16:30

PHASE SEPARATION SCIENCE, INC. QC Summary 16090718

Icor Ltd. Robinson Terminal North

Prep Method: SW5030B Analytical Method: SW-846 8260 B Seq Number: 135686 Matrix: Water Date Prep: 09/09/16

LCS Sample Id: 62494-1-BKS MR Sample Id: 62494-1-BLK

Parameter	MB Sample Id:	62494-1-BLK		LCS San	nple Id:	62494-1-BKS			
Benzmeh	Parameter					Limits	Units	-	Flag
Bromochloromethane	Acetone	<10.00					ug/L		
Bromotion	Benzene	<1.000	50.00				ug/L		
Bromomethane	Bromochloromethane	<1.000	50.00	48.72	97	82-136	ug/L	09/09/16 11:28	3
Bromomethane	Bromodichloromethane	e <1.000	50.00	56.88	114		ug/L	09/09/16 11:28	3
2-Butanome (MEK) <10.00 50.00 36.86 74 39-135 ug/L 09/09/16 11:28 Carbon Disulfide <10.00	Bromoform	<5.000	50.00	47.02	94	80-126	ug/L	09/09/16 11:28	3
Carbon Tetrachloride <10.00 50.00 52.77 106 85-124 ug/L 0809/16 11:28 Carbon Tetrachloride <1.000	Bromomethane	<1.000	50.00	51.68	103	64-139	ug/L	09/09/16 11:28	3
Carbon Tetrachloride 41,000 50,00 48,49 97 81-138 ugfL 09/09/16 11:28 Chloroebnzone <1,000	2-Butanone (MEK)	<10.00	50.00	36.86	74	39-135	ug/L	09/09/16 11:28	3
Chloroehtane	Carbon Disulfide	<10.00	50.00	52.77	106	85-124	ug/L	09/09/16 11:28	3
Chlorochane <1,000 50,00 54,33 109 75-129 ugl 09/09/16 11:28 Chloromethane <1,000	Carbon Tetrachloride	<1.000	50.00	48.49	97	81-138	ug/L	09/09/16 11:28	3
Chloroform 41,000 50,00 48,75 98 85,128 ug/L 09/09/16 11:28 Chloromethane <1,000 50,00 51,64 103 60,139 ug/L 09/09/16 11:28 Cyclohexane <10,00 50,00 48,91 98 69-127 ug/L 09/09/16 11:28 1,2-Dichloromethane <1,000 50,00 48,91 98 69-127 ug/L 09/09/16 11:28 1,2-Dichloromethane (EDB) <1,000 50,00 53,89 108 82-121 ug/L 09/09/16 11:28 1,2-Dichlorobenzene <1,000 50,00 55,51 111 82-123 ug/L 09/09/16 11:28 1,3-Dichlorobenzene <1,000 50,00 53,82 108 81-123 ug/L 09/09/16 11:28 1,4-Dichlorobenzene <1,000 50,00 53,82 108 81-121 ug/L 09/09/16 11:28 1,1-Dichlorobenzene <1,000 50,00 59,92 102 83-123 ug/L 09/09/16 11:28 1,1-Dichlorobenzen	Chlorobenzene	<1.000	50.00	52.84	106	85-120	ug/L	09/09/16 11:28	3
Chloromethane <1,000 50,00 51,64 103 60,139 ug/L 09/09/16 11:28 Cyclohexane <10,00	Chloroethane	<1.000	50.00	54.33	109	75-129	ug/L	09/09/16 11:28	3
Cyclohexane < 10.00 50.00 51.23 102 55.131 ug/L 09/09/16 11:28 1,2-Dibromo-S-Chloropropane < 50.00	Chloroform	<1.000	50.00	48.75	98	85-128	ug/L		
1.2-Dibromo-S-Chloropropane 410.00 50.00 48.91 98 69-127 ug/L 09/09/16 11:28 Dibromochloromethane <1.000	Chloromethane	<1.000	50.00	51.64	103	60-139	ug/L	09/09/16 11:28	3
Dibromochloromethane	Cyclohexane	<10.00	50.00	51.23	102	55-131	ug/L		
1,2-Dibromoethane (EDB) <1,000	1,2-Dibromo-3-Chlorop	propane <10.00	50.00	48.91	98	69-127	ug/L	09/09/16 11:28	3
1,2-Dichlorobenzene <1,000	Dibromochloromethan	e <1.000	50.00	49.22	98	82-127	ug/L	09/09/16 11:28	3
1,3-Dichlorobenzene <1,000	1,2-Dibromoethane (El	DB) <1.000	50.00	53.89	108	82-121	ug/L	09/09/16 11:28	3
1.4-Dichlorobenzene	1,2-Dichlorobenzene	<1.000	50.00	55.51	111	82-123	ug/L	09/09/16 11:28	3
Dichlorodifluoromethane	1,3-Dichlorobenzene	<1.000	50.00	54.61	109	81-123	ug/L	09/09/16 11:28	3
1,1-Dichloroethane <1,000	1,4-Dichlorobenzene	<1.000	50.00	53.82	108	81-121	ug/L	09/09/16 11:28	3
1,2-Dichloroethane <1,000	Dichlorodifluoromethar	ne <1.000	50.00	48.01	96	69-147	ug/L	09/09/16 11:28	3
1,1-Dichloroethene <1,000	1,1-Dichloroethane	<1.000	50.00	50.92	102	83-123	ug/L	09/09/16 11:28	3
cis-1,2-Dichloroethene <1,000 50.00 55.29 111 87-127 ug/L 09/09/16 11:28 1,2-Dichloropropane <1,000	1,2-Dichloroethane	<1.000	50.00	54.50	109	86-138	ug/L	09/09/16 11:28	3
1,2-Dichloropropane <1,000	1,1-Dichloroethene	<1.000	50.00	58.69	117	85-127	ug/L	09/09/16 11:28	3
cis-1,3-Dichloropropene <1.000 50.00 52.24 104 79-131 ug/L 09/09/16 11:28 trans-1,3-Dichloropropene <1.000 50.00 53.12 106 82-133 ug/L 09/09/16 11:28 trans-1,2-Dichloroethene <1.000 50.00 49.22 98 85-125 ug/L 09/09/16 11:28 Ethylbenzene <1.000 50.00 45.97 92 37-137 ug/L 09/09/16 11:28 2-Hexanone <10.00 50.00 49.90 100 70-131 ug/L 09/09/16 11:28 Isopropylbenzene <10.00 50.00 50.98 102 69-127 ug/L 09/09/16 11:28 Methyl Acetate <10.00 50.00 51.73 103 75-129 ug/L 09/09/16 11:28 Methylepckhexane <10.00 50.00 52.05 104 86-124 ug/L 09/09/16 11:28 Methylepckhexane <10.00 50.00 45.01 90 39-143 ug/L 09/09/16 11:28 Methylene Chlori	cis-1,2-Dichloroethene	<1.000	50.00	55.29	111	87-127	ug/L	09/09/16 11:28	3
trans-1,3-Dichloropropene <1.000 50.00 53.12 106 82-133 ug/L 09/09/16 11:28 trans-1,2-Dichloroethene <1.000 50.00 49.22 98 85-125 ug/L 09/09/16 11:28 Ethylbenzene <1.000 50.00 55.49 111 83-123 ug/L 09/09/16 11:28 2-Hexanone <10.00 50.00 45.97 92 37-137 ug/L 09/09/16 11:28 Isopropylbenzene <1.000 50.00 50.98 102 69-127 ug/L 09/09/16 11:28 Methyl Acetate <10.00 50.00 50.98 102 69-127 ug/L 09/09/16 11:28 Methyler Chloride <10.00 50.00 51.73 103 75-129 ug/L 09/09/16 11:28 Methyle-Perlanone <5.000 50.00 45.01 90 39-143 ug/L 09/09/16 11:28 Methyl-L-Perlanone <1.000 50.00 49.63 99 61-118 ug/L 09/09/16 11:28 Methyl-L-Putyl ether	1,2-Dichloropropane	<1.000	50.00	55.26	111	79-125	ug/L	09/09/16 11:28	3
trans-1,2-Dichloroethene <1.000 50.00 49.22 98 85-125 ug/L 09/09/16 11:28 Ethylbenzene <1.000	cis-1,3-Dichloropropen	e <1.000	50.00	52.24	104	79-131	ug/L	09/09/16 11:28	3
Ethylbenzene <1.000	trans-1,3-Dichloroprop	ene <1.000	50.00	53.12	106	82-133	ug/L		
2-Hexanone	trans-1,2-Dichloroethe	ne <1.000	50.00	49.22	98		ug/L	09/09/16 11:28	3
Isopropylbenzene	Ethylbenzene	<1.000	50.00	55.49		83-123	ug/L	09/09/16 11:28	3
Methyl Acetate <10.00 50.00 50.98 102 69-127 ug/L 09/09/16 11:28 Methylcyclohexane <10.00	2-Hexanone	<10.00					ug/L		
Methylcyclohexane <10.00 50.00 51.73 103 75-129 ug/L 09/09/16 11:28 Methylene Chloride <1.000	Isopropylbenzene	<1.000	50.00	49.90	100		ug/L		
Methylene Chloride <1.000 50.00 52.05 104 86-124 ug/L 09/09/16 11:28 4-Methyl-2-Pentanone <5.000	Methyl Acetate						ug/L		
4-Methyl-2-Pentanone <5.000	Methylcyclohexane	<10.00	50.00	51.73	103		ug/L	09/09/16 11:28	3
Methyl-t-butyl ether <1.000 50.00 44.39 89 75-134 ug/L 09/09/16 11:28 Naphthalene <1.000	Methylene Chloride	<1.000					ug/L		
Naphthalene <1.000 50.00 49.63 99 61-118 ug/L 09/09/16 11:28 Styrene <1.000	4-Methyl-2-Pentanone						-		
Styrene <1.000 50.00 48.55 97 80-120 ug/L 09/09/16 11:28 1,1,2,2-Tetrachloroethane <1.000	Methyl-t-butyl ether	<1.000	50.00	44.39	89		-	09/09/16 11:28	3
1,1,2,2-Tetrachloroethane <1.000	•	<1.000					ug/L	09/09/16 11:28	3
Tetrachloroethene <1.000 50.00 54.54 109 83-138 ug/L 09/09/16 11:28 Toluene <1.000	Styrene						ug/L		
Toluene <1.000 50.00 55.80 112 88-126 ug/L 09/09/16 11:28 1,2,3-Trichlorobenzene <1.000	1,1,2,2-Tetrachloroetha	ane <1.000	50.00				ug/L	09/09/16 11:28	3
1,2,3-Trichlorobenzene <1.000	Tetrachloroethene						ug/L		
1,2,4-Trichlorobenzene <1.000	Toluene						ug/L		
1,1,1-Trichloroethane <1.000	1,2,3-Trichlorobenzene						ug/L		
1,1,2-Trichloroethane <1.000	1,2,4-Trichlorobenzene						ug/L		
Trichloroethene <1.000 50.00 55.24 110 87-127 ug/L 09/09/16 11:28 Trichlorofluoromethane <5.000							ug/L		
Trichlorofluoromethane <5.000 50.00 56.59 113 77-147 ug/L 09/09/16 11:28 1,1,2-Trichloro-1,2,2-Trifluoroethane <1.000							•		
1,1,2-Trichloro-1,2,2-Trifluoroethane <1.000									
Vinyl Chloride <1.000 50.00 51.60 103 74-138 ug/L 09/09/16 11:28							ug/L		
							_		
m,p-Xylenes <2.000 100 94.99 95 84-124 ug/L 09/09/16 11:28	-	<1.000							
	m,p-Xylenes	<2.000	100	94.99	95	84-124	ug/L	09/09/16 11:28	3

PHASE SEPARATION SCIENCE, INC. QC Summary 16090718

Icor Ltd. Robinson Terminal North

Prep Method: SW5030B Analytical Method: SW-846 8260 B Seq Number: 135686 Matrix: Water Date Prep: 09/09/16

62494-1-BLK LCS Sample Id: 62494-1-BKS MB Sample Id:

MB Campic id. 0240	J- I DLIX				02.0	•				
Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec		Limits		Units	Analysis F Date	lag
o-Xylene	<1.000	50.00	47.84	96		79-126		ug/L	09/09/16 11:28	
Surrogate	MB %Rec	MB Flag	_	CS sult	LCS Flag		Limits	Units	Analysis Date	
4-Bromofluorobenzene	102		10	00			86-111	%	09/09/16 11:28	
Dibromofluoromethane	97		10	02			91-119	%	09/09/16 11:28	
Toluene-D8	108		10	03			90-117	%	09/09/16 11:28	

PHASE SEPARATION SCIENCE, INC. QC Summary 16090718

Icor Ltd. Robinson Terminal North

Prep Method: SW5030 Analytical Method: SW-846 8260 B Seq Number: 135708 Matrix: Solid Date Prep: 09/12/16

LCS Sample Id: 62514-1-BKS MR Sample Id: 62514-1-BLK

MB Sample Id:	62514-1-BLK		LCS San	nple Id:	62514-1-BKS			
Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Analysis Date	Flag
Acetone	<20.00	60.00	77.54	129	46-127	ug/kg	09/12/16 13:27	Н
Benzene	<5.000	60.00	59.05	98	70-127	ug/kg	09/12/16 13:27	
Bromochloromethane	<5.000	60.00	53.57	89	68-122	ug/kg	09/12/16 13:27	
Bromodichloromethar	ne <5.000	60.00	47.82	80	68-122	ug/kg	09/12/16 13:27	
Bromoform	<5.000	60.00	49.46	82	57-127	ug/kg	09/12/16 13:27	
Bromomethane	<5.000	60.00	55.79	93	68-123	ug/kg	09/12/16 13:27	
2-Butanone (MEK)	<20.00	60.00	71.91	120	41-136	ug/kg	09/12/16 13:27	
Carbon Disulfide	<10.00	60.00	61.78	103	66-135	ug/kg	09/12/16 13:27	
Carbon Tetrachloride	<5.000	60.00	45.84	76	64-147	ug/kg	09/12/16 13:27	
Chlorobenzene	<5.000	60.00	54.66	91	70-121	ug/kg	09/12/16 13:27	
Chloroethane	<5.000	60.00	58.01	97	66-142	ug/kg	09/12/16 13:27	
Chloroform	<5.000	60.00	52.12	87	68-123	ug/kg	09/12/16 13:27	
Chloromethane	<5.000	60.00	66.80	111	65-136	ug/kg	09/12/16 13:27	
Cyclohexane	<20.00	60.00	61.71	103	62-138	ug/kg	09/12/16 13:27	
1,2-Dibromo-3-Chloro	propane <40.00	60.00	50.96	85	55-122	ug/kg	09/12/16 13:27	
Dibromochloromethar	ne <5.000	60.00	49.76	83	61-122	ug/kg	09/12/16 13:27	
1,2-Dibromoethane (E	EDB) <5.000	60.00	53.10	89	63-119	ug/kg	09/12/16 13:27	
1,2-Dichlorobenzene	<5.000	60.00	54.55	91	65-121	ug/kg	09/12/16 13:27	
1,3-Dichlorobenzene	<5.000	60.00	55.44	92	69-121	ug/kg	09/12/16 13:27	
1,4-Dichlorobenzene	<5.000	60.00	54.42	91	69-118	ug/kg	09/12/16 13:27	
Dichlorodifluorometha	ane <5.000	60.00	49.90	83	53-162	ug/kg	09/12/16 13:27	
1,1-Dichloroethane	<5.000	60.00	58.02	97	70-127	ug/kg	09/12/16 13:27	
1,2-Dichloroethane	<5.000	60.00	49.07	82	68-118	ug/kg	09/12/16 13:27	
1,1-Dichloroethene	<5.000	60.00	58.56	98	69-133	ug/kg	09/12/16 13:27	
1,2-Dichloropropane	<5.000	60.00	55.72	93	70-122	ug/kg	09/12/16 13:27	
cis-1,2-Dichloroethen	e <5.000	60.00	58.46	97	68-126	ug/kg	09/12/16 13:27	
cis-1,3-Dichloroprope	ne <5.000	60.00	51.93	87	68-121	ug/kg	09/12/16 13:27	
trans-1,2-Dichloroethe	ene <5.000	60.00	59.66	99	70-132	ug/kg	09/12/16 13:27	
trans-1,3-Dichloropro	pene <5.000	60.00	49.26	82	67-115	ug/kg	09/12/16 13:27	
Ethylbenzene	<5.000	60.00	54.55	91	70-125	ug/kg	09/12/16 13:27	
2-Hexanone	<20.00	60.00	60.80	101	40-121	ug/kg	09/12/16 13:27	
Isopropylbenzene	<5.000	60.00	55.70	93	68-130	ug/kg	09/12/16 13:27	
Methyl Acetate	<20.00	60.00	68.09	113	60-125	ug/kg	09/12/16 13:27	
Methylcyclohexane	<20.00	60.00	53.21	89	62-150	ug/kg	09/12/16 13:27	
Methylene Chloride	<5.000	60.00	59.41	99	67-121	ug/kg	09/12/16 13:27	
4-Methyl-2-Pentanon	e <20.00	60.00	59.20	99	48-117	ug/kg	09/12/16 13:27	
Methyl-t-butyl ether	<5.000	60.00	54.78	91	66-119	ug/kg	09/12/16 13:27	
Naphthalene	<5.000	60.00	53.27	89	54-115	ug/kg	09/12/16 13:27	
Styrene	<5.000	60.00	52.80	88	71-120	ug/kg	09/12/16 13:27	
1,1,2,2-Tetrachloroeth	nane <5.000	60.00	59.63	99	59-122	ug/kg	09/12/16 13:27	
Tetrachloroethene	<5.000	60.00	48.55	81	65-145	ug/kg	09/12/16 13:27	
Toluene	<5.000	60.00	52.04	87	69-129	ug/kg	09/12/16 13:27	
1,2,3-Trichlorobenzer	ne <5.000	60.00	48.62	81	60-114	ug/kg	09/12/16 13:27	
1,2,4-Trichlorobenzer	ne <5.000	60.00	49.37	82	64-115	ug/kg	09/12/16 13:27	
1,1,1-Trichloroethane		60.00	47.79	80	65-139	ug/kg	09/12/16 13:27	
1,1,2-Trichloroethane	<5.000	60.00	55.62	93	64-125	ug/kg	09/12/16 13:27	
Trichloroethene	<5.000	60.00	50.31	84	69-133	ug/kg	09/12/16 13:27	
Trichlorofluoromethar	ne <5.000	60.00	47.54	79	59-153	ug/kg	09/12/16 13:27	
1,1,2-Trichloro-1,2,2-Trif			49.70	83	62-139	ug/kg	09/12/16 13:27	
Vinyl Chloride	<5.000		70.46	117	69-142	ug/kg	09/12/16 13:27	
m,p-Xylenes	<10.00	120	108.6	91	71-124	ug/kg	09/12/16 13:27	

PHASE SEPARATION SCIENCE, INC.

QC Summary 16090718

Icor Ltd. Robinson Terminal North

Analytical Method: SW-846 8260 B Prep Method: SW5030 Seq Number: 135708 Matrix: Solid Date Prep: 09/12/16

MB Sample Id: 62514-1-BLK LCS Sample Id: 62514-1-BKS

MB Sample Id.	02314-1-DLN		LOO Gan	iipic iu	. 02014-1-010					
Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec		Limits		Units	Analysis Date	Flag
o-Xylene	<5.000	60.00	52.79	88	3	72-123		ug/kg	09/12/16 13:27	
Surrogate	MB %Red	MB Flag	· -	.CS esult	LCS Flag		Limits	Units	Analysis Date	
4-Bromofluorobenzene	109		9	97			82-126	%	09/12/16 13:27	
Dibromofluoromethane	99		1	102			92-113	%	09/12/16 13:27	
Toluene-D8	98		1	100			94-105	%	09/12/16 13:27	

F = RPD exceeded the laboratory control limits

X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits

L = Recovery of BS,BSD or both below the laboratory control limits



SAMPLE CHAIN OF CUSTODY/AGREEMENT FORM

www.phaseonline.com

email; info@phaseonline.com

PHASE SEPARATION SCIENCE, INC.

700 STATE RESULTS REPORTED TO: DE PA VA JVV OTHER SWESUrface WIT DW=Drinking WIT GW=Ground WIT WW=Waste WIT 0=011 S=Soil L=Liquid S0L=Soild A=Air WI=Wipe REMARKS Temp: 6 Custody Seal: ABS loe Present: MES Shipping Carrier: PAGE ⋛□ **EDD FORMAT TYPE** ☐ 2-Day Requested TAT (One TAT per COC) OTHER Other 8160600 Emergency Data Deliverables Required: COA QC SUMM CLP LIKE X 3-Day DW COMPLIANCE? Special Instructions 5-Day X X PSS Work Order #: 5 AMPLE 0 0 0 2 MATRIX 20 0 30 20 *PROJECT MGR. M. BRUZTEC/*PHONE NO. 703,608-5969 20 20 50 20 50 20 Received By: Received By: Received By: Received By 5021 1550 1605 1520 1055 *PROJECT NAME: ROBINSON JEMMINOL NARBLECT NO. 1000 1515 1415 2041 ShSI SITE LOCATION: 500/501 N. UNION ST. PO. NO. DW CERT NO. 9/10/16 1335 040 Time *OFFICE LOC EMAIL: LANDSTRATE AU. COFAX NO. W. 45t-08(37.8-38.8) MiHot-07 (7-8 MIHST-08 (4-5 Date M. Hpt-04 (4-5) *SAMPLE IDENTIFICATION MILLOTCHE MiH st -06 (4-5 M.Hot-04 (1-2) MI425-06 (1-2 M, Hot-03 (4-5 Barra SAMPLER(S): MIRRU ETEG *CLIENT: 1002, LTB. M. Hzt-03 Relinquished By: (2) Relinquished By: (4) Relinquished By: (3) LAB NO. 3 0 2

6630 Baltimore National Pike - Route 40 West - Baltimore, Maryland 21228 -



SAMPLE CHAIN OF CUSTODY/AGREEMENT FORM

www.phaseonline.com

email: info@phaseonline.com

PHASE SEPARATION SCIENCE, INC.

	*CLIENT: 1 COL, LID	*OFFICE LOC	E LOC			1000	The state of the s	200	210709	~	PAGE	0	1
*PROJE	*PROJECT MGR: M, REUT 2561 *PHONE NO. (703608	NOH4* /%	E NO : (7	1.1	5468	Matrix Co SW=Surta	Codes: Irface Wtr DW=Drink	Matrix Codes: SW=Surface Wir DW=Drinking Wtr GW=Ground Wtr WW=Waste Wtr 0=0il	d Wtr WW=Wast		S-Soil L-Liquid SOL-Solid A-Air WI-Wipe	SOL=Solid	A=Air WI=Wi
EMAIL: 6	EMAIL: LANS STRAT BACK COPY NO.	2 CO FAX NO	~			၌ ပ (Preservatives Used SAMPLE	- S.	50	8			_
*PROJEC	*PROJECT NAME: ROGINSON TERMINAL NURTH	TERMINA.	L NOZ	ECT NO.:			TYPE Method Reguired	08	25/06/	17/29		/	_
SITE LOC	SITE LOCATION: 500/501 N. WION ST. PO. NO.	V. winds	ST. P.O.	0		_	COMP (3)	28	W.	100	/	\	_
SAMPLER(S):	R(S): M. BRUZZESI		DW CERT NO.:	:0:		ZШ	G= *	10/50	W Y	/	/	<u></u>	
LAB NO.	*SAMPLE IDENTIFICATION		*DATE (SAMPLED)	*TIME (SAMPLED)	MATRIX (See Codes)		200	15/2	10			\	REMARKS
11	MIHPT-10 (24,5-25,5	7		1010	05	6	8 A	x x					
12	Mithot-08-60 (37-40)	w (37-40)	1	1330	Gew	7	b	×	X				
5 Relinquished B	(1) Med (1)		Time	Received By:			* Req	nested T	AT (One TAT per		# of Coolers:	7	
3	1 P	4	oto		TTE	101	ò ž	ay DE			Custody Seal:	V	
Relinquish	Relinquished By: (2)	9/7	Time (335)	Received E	D. Paris	3	O Co data	Data Deliverables Required: COA QC SUMM CLP LIKE	122	OTHER Ship	Ice Present: PLES Shipping Carrier:	V)	Temp: S, 4%
Refinquish	Relinquished By: (3)	Date	Time	Received	By:		Spec	Special Instructions:					
Relinquished By: (4)	ned By: (4)	Date	Time	Received By:	3y:		DW COP	MPLIANCE?	EDD FORMAT TYPE	TYPE	1	SULTS RI	STATE RESULTS REPORTED TO:

6630 Baltimore National Pike • Route 40 West • Baltimore, Maryland 21228 • (410) 747-8770 • (800) 932-9047 • Fax (410) 788-8723



Phase Separation Science, Inc

Sample Receipt Checklist

Client Name Icor Ltd. Date Received 09/07/2016 01:35:00 PM

Project Name Robinson Terminal North Delivered By Trans Time Express

Disposal Date 10/12/2016 Tracking No Not Applicable

Logged In By Rachel Davis

Shipping Container(s)

No. of Coolers

		Ice	Present
Custody Seal(s) Intact?	N/A	Temp (deg C)	4
Seal(s) Signed / Dated?	N/A	Temp Blank Present	No

Seal(s) Signed / Dated?

N/A

Temp Blank Present No

Documentation

COC agrees with sample labels?

Chain of Custody

Sampler Name

Mike Bruzzesi

MD DW Cert. No.

N/A

Sample Container

Appropriate for Specified Analysis?

Intact?

Custody Seal(s) Intact? Not Applicable

Yes

Seal(s) Signed / Dated Not Applicable

Labeled and Labels Legible? Yes

Total No. of Samples Received 12

Total No. of Containers Received 30

Preservation

Total Metals	(pH<2)	N/A
Dissolved Metals, filtered within 15 minutes of collection	(pH<2)	N/A
Orthophosphorus, filtered within 15 minutes of collection		N/A
Cyanides	(pH>12)	N/A
Sulfide	(pH>9)	N/A
TOC, DOC (field filtered), COD, Phenols	(pH<2)	N/A
TOX, TKN, NH3, Total Phos	(pH<2)	N/A
VOC, BTEX (VOA Vials Rcvd Preserved)	(pH<2)	Yes
Do VOA vials have zero headspace?		Yes
624 VOC (Rcvd at least one unpreserved VOA vial)		N/A
524 VOC (Rcvd with trip blanks)	(pH<2)	N/A



Phase Separation Science, Inc

Sample Receipt Checklist

Work Order # 16090718 Received By Rachel Davis

Client Name Icor Ltd. Date Received 09/07/2016 01:35:00 PM

Project Name Robinson Terminal North Delivered By Trans Time Express

Disposal Date 10/12/2016 Tracking No Not Applicable

Logged In By Rachel Davis

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Samples Inspected/Checklist Completed By:	Rachel Davis	Date: 09/07/2016	
PM Review and Approval:	Simon Crisp	Date: 09/08/2016	

Analytical Report for

Icor Ltd.

Certificate of Analysis No.: 16090815

Project Manager: Mike Bruzzesi

Project Name: Robinson Terminal North Project Location: 500/501 N. Union St.



September 22, 2016
Phase Separation Science, Inc.
6630 Baltimore National Pike
Baltimore, MD 21228
Phone: (410) 747-8770

Fax: (410) 788-8723

PHASE SEPARATION SCIENCE, INC.



September 22, 2016

Mike Bruzzesi Icor Ltd. PO Box 406 Middleburg, VA 20118

Reference: PSS Work Order(s) No: 16090815

Project Name: Robinson Terminal North Project Location: 500/501 N. Union St.

Dear Mike Bruzzesi:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Work Order(s) numbered **16090815**. This report version includes revised sample results to provide Dioxins results. This report cancels and supersedes report version 1.000 dated September 15, 2016.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on October 13, 2016, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

Dan PrucnalLaboratory Manager



Sample Summary

Client Name: Icor Ltd.

Project Name: Robinson Terminal North

Work Order Number(s): 16090815

The following samples were received under chain of custody by Phase Separation Science (PSS) on 09/08/2016 at 01:00 pm

Lab Sample Id	Sample Id	Matrix	Date/Time Collected
16090815-002	M1Hpt-08 (36.5-40)	GROUND WATER	09/07/16 08:30
16090815-003	ICOR-SB3 (10.5-11.5)	SOIL	09/07/16 08:25
16090815-004	M1Hpt-05 (1-2)	SOIL	09/07/16 10:05
16090815-005	M1Hpt-12 (1-2)	SOIL	09/07/16 12:50
16090815-006	M1Hpt-18 (1-2)	SOIL	09/07/16 13:30
16090815-007	M1Hpt-17 (1-2)	SOIL	09/07/16 13:05
16090815-008	M1Hpt-17 (4-5)	SOIL	09/07/16 13:10
16090815-009	M1Hpt-19 (1-2)	SOIL	09/07/16 15:00
16090815-010	M1Hpt-19 (4-5)	SOIL	09/07/16 15:05
16090815-011	ICOR-SB14 (1-2)	SOIL	09/07/16 13:55
16090815-012	ICOR-SB14 (4-5)	SOIL	09/07/16 14:00
16090815-013	ECS-B7 (1-2)	SOIL	09/07/16 14:45
16090815-014	ECS-B7 (5-6)	SOIL	09/07/16 14:50
16090815-015	ICOR-SB9	SOIL	09/07/16 15:10
16090815-016	M1Hpt-13 (1-2)	SOIL	09/07/16 15:15
16090815-017	M1Hpt-13 (4-5)	SOIL	09/07/16 15:20

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

- 1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
- 2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
- 3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
- 4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminates, and part 141.3, for the secondary drinking water contaminates.
- 5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
- 6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
- 7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
- 8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.



Sample Summary

Client Name: Icor Ltd.

Project Name: Robinson Terminal North

Work Order Number(s): 16090815

Standard Flags/Abbreviations:

- B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- C Results Pending Final Confirmation.
- E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- Fail The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
- J The target analyte was positively identified below the reporting limit but greater than the MDL.
- MDL This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is an estimate of the minimum amount of a substance that an analytical process can reliably detect. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific.
- ND Not Detected at or above the reporting limit.
- RL PSS Reporting Limit.
- U Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156

State Certifications: MD 179, WV 303 Regulated Soil Permit: P330-12-00268 NSWC USCG Accepted Laboratory LDBE MWAA LD1997-0041-2015

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090815

Icor Ltd., Middleburg, VA

September 22, 2016

Sample ID: M1Hpt-08 (36.5-40) Matrix: GROUND WATER			e Sampled: Received:				e ID: 1609081	5-002
Total Petroleum Hydrocarbons - DRO			SW-846 8015			Preparation Meth	nod: 3510C	
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-DRO (Diesel Range Organics)	0.48	mg/L	0.11		1	09/12/16	09/15/16 09:50	0 1045
Sample ID: ICOR-SB3 (10.5-11.5)		Date/Tim	e Sampled:	09/07/	2016 08:25	PSS Sample	e ID: 1609081	5-003
Matrix: SOIL		Date/Time	Received:	09/08/	2016 13:00	% S	olids: 85	
Total Petroleum Hydrocarbons - DRO	Analytica	al Method:	SW-846 8015	С		Preparation Meth	nod: SW3550C	
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-DRO (Diesel Range Organics)	13	mg/kg	12		1	09/12/16	09/14/16 01:5	8 1045
Polychlorinated Biphenyls	Analytica	al Method:	SW-846 8082	Α		Preparation Meth		_
	Result	Units	DI	Flag	Dil	Clean up Method Prepared	l: SW846 3665 <i>f</i> Analyzed	A Analyst
PCB-1016	ND	mg/kg	0.060	i iag	1	•	09/12/16 10:0	
PCB-1221	ND	mg/kg	0.060		1		09/12/16 10:09	
PCB-1232	ND	mg/kg	0.060		1		09/12/16 10:09	
PCB-1242	ND	mg/kg	0.060		1		09/12/16 10:09	
PCB-1248	ND	mg/kg	0.060		1		09/12/16 10:0	
PCB-1254	ND	mg/kg	0.060		1	09/09/16	09/12/16 10:09	9 1029
PCB-1260	ND	mg/kg	0.060		1	09/09/16	09/12/16 10:09	9 1029
Sample ID: M1Hpt-05 (1-2)		Date/Tim	e Sampled:	09/07/	2016 10:05	PSS Sample	e ID: 1609081	5-004
Matrix: SOIL		Date/Time	Received:	09/08/	2016 13:00	% S	olids: 90	
Arsenic	Analytica	al Method:	SW-846 6020	А		Preparation Meth	nod: 3050B	
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Arsenic	2.2	mg/kg	0.52		1	09/12/16	09/12/16 19:00	0 1033
Sample ID: M1Hpt-12 (1-2)			e Sampled:				e ID: 1609081	5-005
Matrix: SOIL		Date/Time	Received:	09/08/	2016 13:00	% S	olids: 80	
Arsenic	Analytica	al Method:	SW-846 6020	Α		Preparation Meth	nod: 3050B	
<u> </u>	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Arsenic	400	mg/kg	5.6		10	09/12/16	09/13/16 15:2	1 1033

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090815

Icor Ltd., Middleburg, VA

September 22, 2016

Sample ID: M1Hpt-18 (1-2) Matrix: SOIL			ne Sampled: e Received:			-	e ID: 1609081	15-006
							olids: 84	
Arsenic	Analytica	al Method:	SW-846 6020	А	F	Preparation Meth	nod: 3050B	
	Result	Units	RL	Flag Dil		Prepared	Analyzed	Analyst
Arsenic	12	mg/kg	0.50		1	09/12/16	09/12/16 19:3	9 1033
Sample ID: M1Hpt-17 (1-2)		Date/Tim	ne Sampled:	09/07/2016	3 13:05	PSS Sample	e ID: 1609081	15-007
Matrix: SOIL			e Received:			-	olids: 84	
PP Metals			SW-846 6020			Preparation Meth		
	Result	Units	RL	Flag Dil		Prepared	Analyzed	Analyst
Antimony	14	mg/kg	2.6		1	09/12/16	09/12/16 20:1	2 1033
Arsenic	670	mg/kg	52	10	0	09/12/16	09/13/16 15:2	7 1033
Beryllium	ND	mg/kg	2.6		1	09/12/16	09/12/16 20:1	2 1033
Cadmium	12	mg/kg	2.6		1	09/12/16	09/12/16 20:1	2 1033
Chromium	27	mg/kg	26	1	0	09/12/16	09/13/16 15:3	4 1033
Copper	6,900	mg/kg	260	10	0	09/12/16	09/13/16 15:2	7 1033
Lead	1,500	mg/kg	260	10	0	09/12/16	09/13/16 15:2	7 1033
Mercury	20	mg/kg	1.0	1	0	09/12/16	09/13/16 15:3	4 1033
Nickel	16	mg/kg	2.6		1	09/12/16	09/12/16 20:1	2 1033
Selenium	12	mg/kg	2.6		1	09/12/16	09/12/16 20:1	2 1033
Silver	16	mg/kg	2.6		1	09/12/16	09/12/16 20:1	2 1033
Thallium	ND	mg/kg	21	1	0	09/12/16	09/13/16 15:3	4 1033
Zinc	4,300	mg/kg	1,000	10	0	09/12/16	09/13/16 15:2	7 1033
Sample ID: M1Hpt-17 (4-5)		Date/Tim	ne Sampled:	09/07/2016	3 13:10	PSS Sample	e ID: 1609081	15-008
Matrix: SOIL		Date/Tim	e Received:	09/08/2016	3 13:00	% S	olids: 81	
Arsenic	Analytica	al Method:	SW-846 6020	Α	F	Preparation Meth	nod: 3050B	
_	Result	Units	RL	Flag Dil		Prepared	Analyzed	Analyst
Arsenic	6.9	mg/kg	0.60		1	09/12/16	09/12/16 20:1	8 1033
Sample ID: M1Hpt-19 (1-2)			-			PSS Sample	e ID: 1609081	15-009
Matrix: SOIL		Date/Tim	e Received:	09/08/2016	3 13:00	% S	olids: 88	
Arsenic	Analytica	al Method:	SW-846 6020	Α	F	reparation Method: 3050B		
	Result	Units	RL	Flag Dil		Prepared	Analyzed	Analyst
Arsenic	130	mg/kg	0.50		1	09/12/16	09/12/16 20:2	5 1033

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090815

Icor Ltd., Middleburg, VA

September 22, 2016

Sample ID: M1Hpt-19 (4-5) Matrix: SOIL			Sampled: Received:			•
Arsenic			SW-846 6020			Preparation Method: 3050B
_	Result	Units	RL	Flag	Dil	Prepared Analyzed Analyst
Arsenic	480	mg/kg	4.4		10	09/12/16 09/13/16 15:40 1033
Sample ID: ICOR-SB14 (1-2)		Date/Time	Sampled:	09/07/	2016 13	:55 PSS Sample ID: 16090815-011
Matrix: SOIL	ı	Date/Time	Received:	09/08/	2016 13	:00 % Solids: 85
Arsenic	Analytica	l Method: S	SW-846 6020	Α		Preparation Method: 3050B
_	Result	Units	RL	Flag	Dil	Prepared Analyzed Analyst
Arsenic	9.1	mg/kg	0.48		1	09/12/16 09/12/16 20:38 1033
Sample ID: ICOR-SB14 (4-5)		Date/Time	Sampled:	09/07/	2016 14	:00 PSS Sample ID: 16090815-012
Matrix: SOIL	ı	Date/Time	Received:	09/08/	2016 13	:00 % Solids: 83
Arsenic	Analytica	l Method: S	SW-846 6020	Α		Preparation Method: 3050B
_	Result	Units	RL	Flag	Dil	Prepared Analyzed Analyst
Arsenic	9.2	mg/kg	0.45		1	09/12/16 09/12/16 20:44 1033

PHASE SEPARATION SCIENCE, INC.



09/12/16 09/12/16 20:51 1033

CERTIFICATE OF ANALYSIS

No: 16090815

Icor Ltd., Middleburg, VA

September 22, 2016

Project Name: Robinson Terminal North Project Location: 500/501 N. Union St.

Zinc

Sample ID: ECS-B7 (1-2) Matrix: SOIL			e Received:				e ID: 1609081! olids: 89	5-013	
PP Metals	Analytical Method: SW-846 6020 A				Preparation Method: 3050B				
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst	
Antimony	ND	mg/kg	2.5		1	09/12/16	09/12/16 20:51	1033	
Arsenic	49	mg/kg	0.50		1	09/12/16	09/12/16 20:51	1033	
Beryllium	ND	mg/kg	2.5		1	09/12/16	09/12/16 20:51	1033	
Cadmium	ND	mg/kg	2.5		1	09/12/16	09/12/16 20:51	1033	
Chromium	17	mg/kg	2.5		1	09/12/16	09/12/16 20:51	1033	
Copper	39	mg/kg	2.5		1	09/12/16	09/12/16 20:51	1033	
Lead	160	mg/kg	2.5		1	09/12/16	09/13/16 14:27	1033	
Mercury	1.3	mg/kg	0.10		1	09/12/16	09/13/16 14:27	1033	
Nickel	14	mg/kg	2.5		1	09/12/16	09/12/16 20:51	1033	
Selenium	ND	mg/kg	2.5		1	09/12/16	09/12/16 20:51	1033	
Silver	ND	mg/kg	2.5		1	09/12/16	09/12/16 20:51	1033	
Thallium	ND	mg/kg	2.0		1	09/12/16	09/13/16 14:27	1033	

10

130

mg/kg

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090815

Icor Ltd., Middleburg, VA

September 22, 2016

Sample ID: ECS-B7 (1-2)		Date/Time Sar	npled:	09/07/2	016 14:45	PSS Sample	e ID: 16090815	5-013
Matrix: SOIL		Date/Time Rec	eived:	09/08/2	2016 13:00	% S	olids: 89	
Organochlorine Pesticides A	nalytica	Method: SW-84	16 8081	В	I	Preparation Meth	nod: SW3550C	
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
alpha-BHC	ND	ug/kg	4.4		1	09/12/16	09/14/16 19:16	1029
gamma-BHC (Lindane)	ND	ug/kg	4.4		1	09/12/16	09/14/16 19:16	1029
beta-BHC	ND	ug/kg	4.4		1	09/12/16	09/14/16 19:16	1029
delta-BHC	ND	ug/kg	4.4		1	09/12/16	09/14/16 19:16	1029
Heptachlor	ND	ug/kg	4.4		1	09/12/16	09/14/16 19:16	1029
Aldrin	ND	ug/kg	4.4		1	09/12/16	09/14/16 19:16	1029
Heptachlor epoxide	ND	ug/kg	4.4		1	09/12/16	09/14/16 19:16	1029
gamma-Chlordane	ND	ug/kg	4.4		1	09/12/16	09/14/16 19:16	1029
alpha-Chlordane	ND	ug/kg	4.4		1	09/12/16	09/14/16 19:16	1029
4,4-DDE	15	ug/kg	4.4		1	09/12/16	09/14/16 19:16	1029
Endosulfan I	ND	ug/kg	4.4		1	09/12/16	09/14/16 19:16	1029
Dieldrin	ND	ug/kg	4.4		1	09/12/16	09/14/16 19:16	1029
Endrin	ND	ug/kg	4.4		1	09/12/16	09/14/16 19:16	1029
4,4-DDD	6.1	ug/kg	4.4		1	09/12/16	09/14/16 19:16	1029
Endosulfan II	ND	ug/kg	4.4		1	09/12/16	09/14/16 19:16	1029
4,4-DDT	7.0	ug/kg	4.4		1	09/12/16	09/14/16 19:16	1029
Endrin aldehyde	ND	ug/kg	4.4		1	09/12/16	09/14/16 19:16	1029
Methoxychlor	ND	ug/kg	4.4		1	09/12/16	09/14/16 19:16	1029
Endosulfan sulfate	ND	ug/kg	4.4		1	09/12/16	09/14/16 19:16	1029
Endrin ketone	ND	ug/kg	4.4		1	09/12/16	09/14/16 19:16	1029
Toxaphene	ND	ug/kg	110		1	09/12/16	09/14/16 19:16	1029
Chlordane	ND	ug/kg	110		1	09/12/16	09/14/16 19:16	1029

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090815

Icor Ltd., Middleburg, VA

September 22, 2016

Sample ID: ECS-B7 (1-2)		Doto/Time	Sampled:	00/07/2	0016 14:41	E DSS Sampl	e ID: 1609081!	5 012	
Matrix: SOIL			Received:			•	e ib. 16090613 folids: 89)-013	
Polychlorinated Biphenyls			SW-846 8082			Preparation Method: SW3550C			
	,a.,					Clean up Method			
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst	
PCB-1016	ND	mg/kg	0.055		1	09/09/16	09/12/16 10:38	1029	
PCB-1221	ND	mg/kg	0.055		1	09/09/16	09/12/16 10:38	1029	
PCB-1232	ND	mg/kg	0.055		1	09/09/16	09/12/16 10:38	1029	
PCB-1242	ND	mg/kg	0.055		1	09/09/16	09/12/16 10:38	1029	
PCB-1248	ND	mg/kg	0.055		1	09/09/16	09/12/16 10:38	1029	
PCB-1254	ND	mg/kg	0.055		1	09/09/16	09/12/16 10:38	1029	
PCB-1260	ND	mg/kg	0.055		1	09/09/16	09/12/16 10:38	1029	
Chlorinated Herbicides	Analytica	l Method: S	SW-846 8151	Α		Preparation Method: 8151A			
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst	
Dalapon	ND	ug/kg	560		10	09/12/16	09/13/16 17:21	1029	
Dicamba	ND	ug/kg	22		10	09/12/16	09/13/16 17:21	1029	
MCPP	ND	ug/kg	22,000		10	09/12/16	09/13/16 17:21	1029	
MCPA	ND	ug/kg	22,000		10	09/12/16	09/13/16 17:21	1029	
Dichloroprop	ND	ug/kg	220		10	09/12/16	09/13/16 17:21	1029	
2,4-D	ND	ug/kg	220		10	09/12/16	09/13/16 17:21	1029	
2,4,5-TP (Silvex)	ND	ug/kg	22		10	09/12/16	09/13/16 17:21	1029	
2,4,5-T	ND	ug/kg	22		10	09/12/16	09/13/16 17:21	1029	
Dinoseb	ND	ug/kg	110		10	09/12/16	09/13/16 17:21	1029	
2,4-DB	ND	ug/kg	220		10	09/12/16	09/13/16 17:21	1029	

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090815

Icor Ltd., Middleburg, VA

September 22, 2016

Sample ID: ECS-B7 (5-6) Matrix: SOIL		Date/Time Date/Time I	•			•	e ID: 160908 [,] olids: 79	15-014	
Total Petroleum Hydrocarbons - DRO	Analytica	l Method: SV	V-846 8015	С		Preparation Meth	nod: SW3550C	ţ	
DF/HF - No. 2/diesel fuel and heavier fuel/oi	l patterns obse	erved in sampl	le.						
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst	
TPH-DRO (Diesel Range Organics)	100	mg/kg	13	DF	1	09/13/16	09/14/16 07:2	24 1045	
Total Petroleum Hydrocarbons-GRO	Analytica	Analytical Method: SW-846 8015C					Preparation Method: 5030		
_	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst	
TPH-GRO (Gasoline Range Organics)	ND	ug/kg	120		1	09/09/16	09/09/16 14:1	6 1035	

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

Date/Time Sampled: 09/07/2016 14:50 PSS Sample ID: 16090815-014

No: 16090815

Icor Ltd., Middleburg, VA

September 22, 2016

Project Name: Robinson Terminal North Project Location: 500/501 N. Union St.

Sample ID: FCS-B7 (5-6)

Sample ID: ECS-B7 (5-6)	Date/Time Sampled: 09/07/2016 14:50									
Matrix: SOIL	[Date/Time Received: 09/08/2016 13:00					% Solids: 79			
TCL Volatile Organic Compounds	Analytica	l Method: SV	V-846 8260	В	Pr	Preparation Method: 5035A				
_	Result	Units	RL	Flag Dil		Prepared	Analyzed	Analyst		
Acetone	ND	ug/kg	23	1		09/12/16	09/12/16 18:49	9 1011		
Benzene	ND	ug/kg	5.7	1		09/12/16	09/12/16 18:49	9 1011		
Bromochloromethane	ND	ug/kg	5.7	1		09/12/16	09/12/16 18:49	9 1011		
Bromodichloromethane	ND	ug/kg	5.7	1		09/12/16	09/12/16 18:49	9 1011		
Bromoform	ND	ug/kg	5.7	1		09/12/16	09/12/16 18:49	9 1011		
Bromomethane	ND	ug/kg	5.7	1		09/12/16	09/12/16 18:49	9 1011		
2-Butanone (MEK)	ND	ug/kg	23	1		09/12/16	09/12/16 18:49	9 1011		
Carbon Disulfide	ND	ug/kg	11	1		09/12/16	09/12/16 18:49	9 1011		
Carbon Tetrachloride	ND	ug/kg	5.7	1		09/12/16	09/12/16 18:49	9 1011		
Chlorobenzene	ND	ug/kg	5.7	1		09/12/16	09/12/16 18:49	9 1011		
Chloroethane	ND	ug/kg	5.7	1		09/12/16	09/12/16 18:49	9 1011		
Chloroform	ND	ug/kg	5.7	1		09/12/16	09/12/16 18:49	9 1011		
Chloromethane	ND	ug/kg	5.7	1		09/12/16	09/12/16 18:49	9 1011		
Cyclohexane	ND	ug/kg	23	1		09/12/16	09/12/16 18:49	9 1011		
1,2-Dibromo-3-Chloropropane	ND	ug/kg	46	1		09/12/16	09/12/16 18:49	9 1011		
Dibromochloromethane	ND	ug/kg	5.7	1		09/12/16	09/12/16 18:49	9 1011		
1,2-Dibromoethane (EDB)	ND	ug/kg	5.7	1		09/12/16	09/12/16 18:49	9 1011		
1,2-Dichlorobenzene	ND	ug/kg	5.7	1		09/12/16	09/12/16 18:49	9 1011		
1,3-Dichlorobenzene	ND	ug/kg	5.7	1		09/12/16	09/12/16 18:49	9 1011		
1,4-Dichlorobenzene	ND	ug/kg	5.7	1		09/12/16	09/12/16 18:49	9 1011		
Dichlorodifluoromethane	ND	ug/kg	5.7	1		09/12/16	09/12/16 18:49	9 1011		
1,1-Dichloroethane	ND	ug/kg	5.7	1		09/12/16	09/12/16 18:49	9 1011		
1,2-Dichloroethane	ND	ug/kg	5.7	1		09/12/16	09/12/16 18:49	9 1011		
1,1-Dichloroethene	ND	ug/kg	5.7	1		09/12/16	09/12/16 18:49	9 1011		
1,2-Dichloropropane	ND	ug/kg	5.7	1		09/12/16	09/12/16 18:49	9 1011		
cis-1,2-Dichloroethene	ND	ug/kg	5.7	1		09/12/16	09/12/16 18:49	9 1011		
cis-1,3-Dichloropropene	ND	ug/kg	5.7	1		09/12/16	09/12/16 18:49	9 1011		
trans-1,2-Dichloroethene	ND	ug/kg	5.7	1		09/12/16	09/12/16 18:49	9 1011		
trans-1,3-Dichloropropene	ND	ug/kg	5.7	1		09/12/16	09/12/16 18:49	9 1011		
Ethylbenzene	ND	ug/kg	5.7	1		09/12/16	09/12/16 18:49	9 1011		

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090815

Icor Ltd., Middleburg, VA

September 22, 2016

Sample ID: ECS-B7 (5-6)			Sampled:			-	e ID: 1609081	5-014
Matrix: SOIL	[Date/Time	Received:	09/08/2	016 13:00	% S	olids: 79	
TCL Volatile Organic Compounds	Analytica	l Method: S	SW-846 8260	В		Preparation Meth	nod: 5035A	
_	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
2-Hexanone	ND	ug/kg	23		1	09/12/16	09/12/16 18:49	1011
Isopropylbenzene	ND	ug/kg	5.7		1	09/12/16	09/12/16 18:49	1011
Methyl Acetate	ND	ug/kg	23		1	09/12/16	09/12/16 18:49	1011
Methylcyclohexane	ND	ug/kg	23		1	09/12/16	09/12/16 18:49	1011
Methylene Chloride	ND	ug/kg	5.7		1	09/12/16	09/12/16 18:49	1011
4-Methyl-2-Pentanone	ND	ug/kg	23		1	09/12/16	09/12/16 18:49	1011
Methyl-t-butyl ether	ND	ug/kg	5.7		1	09/12/16	09/12/16 18:49	1011
Naphthalene	260	ug/kg	5.7		1	09/12/16	09/12/16 18:49	1011
Styrene	ND	ug/kg	5.7		1	09/12/16	09/12/16 18:49	1011
1,1,2,2-Tetrachloroethane	ND	ug/kg	5.7		1	09/12/16	09/12/16 18:49	1011
Tetrachloroethene	ND	ug/kg	5.7		1	09/12/16	09/12/16 18:49	1011
Toluene	ND	ug/kg	5.7		1	09/12/16	09/12/16 18:49	1011
1,2,3-Trichlorobenzene	ND	ug/kg	5.7		1	09/12/16	09/12/16 18:49	1011
1,2,4-Trichlorobenzene	ND	ug/kg	5.7		1	09/12/16	09/12/16 18:49	1011
1,1,1-Trichloroethane	ND	ug/kg	5.7		1	09/12/16	09/12/16 18:49	1011
1,1,2-Trichloroethane	ND	ug/kg	5.7		1	09/12/16	09/12/16 18:49	1011
Trichloroethene	ND	ug/kg	5.7		1	09/12/16	09/12/16 18:49	1011
Trichlorofluoromethane	ND	ug/kg	5.7		1	09/12/16	09/12/16 18:49	1011
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	ug/kg	5.7		1	09/12/16	09/12/16 18:49	1011
Vinyl Chloride	ND	ug/kg	5.7		1	09/12/16	09/12/16 18:49	1011
m,p-Xylenes	ND	ug/kg	11		1	09/12/16	09/12/16 18:49	1011
o-Xylene	ND	ug/kg	5.7		1	09/12/16	09/12/16 18:49	1011

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090815

Icor Ltd., Middleburg, VA

September 22, 2016

Sample ID: ICOR-SB9		Date/Time					e ID: 1609081	5-015
Matrix: SOIL	ı	Date/Time	Received:	09/08/	2016 13:00	0 % S	olids: 87	
Polychlorinated Biphenyls	Analytica	ıl Method: S'	W-846 8082	Α		Preparation Meth		
	5 1					Clean up Method		
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
PCB-1016	ND	mg/kg	0.058		1		09/12/16 11:0	
PCB-1221	ND	mg/kg	0.058		1		09/12/16 11:0	
PCB-1232	ND	mg/kg	0.058		1		09/12/16 11:0	
PCB-1242	ND	mg/kg	0.058		1		09/12/16 11:0	
PCB-1248	ND	mg/kg	0.058		1		09/12/16 11:0	
PCB-1254	ND	mg/kg	0.058		1		09/12/16 11:0	
PCB-1260	ND	mg/kg	0.058		1		09/12/16 11:0	
Sample ID: M1Hpt-13 (1-2)		Date/Time					e ID: 1609081	5-016
Matrix: SOIL		Date/Time			2016 13:00		olids: 85	
PP Metals	Analytica	ıl Method: S'	W-846 6020	Α		Preparation Meth	nod: 3050B	
_	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Antimony	12	mg/kg	2.6		1	09/12/16	09/12/16 20:5	7 1033
Arsenic	810	mg/kg	51		100	09/12/16	09/13/16 16:0	0 1033
Beryllium	ND	mg/kg	2.6		1	09/12/16	09/12/16 20:5	7 1033
Cadmium	17	mg/kg	2.6		1	09/12/16	09/12/16 20:5	7 1033
Chromium	29	mg/kg	2.6		1	09/12/16	09/12/16 20:5	7 1033
Copper	11,000	mg/kg	260		100	09/12/16	09/13/16 16:0	0 1033
Lead	1,800	mg/kg	260		100	09/12/16	09/13/16 16:0	0 1033
Mercury	26	mg/kg	10		100	09/12/16	09/13/16 16:0	0 1033
Nickel	18	mg/kg	2.6		1	09/12/16	09/12/16 20:5	7 1033
Selenium	11	mg/kg	2.6		1	09/12/16	09/12/16 20:5	7 1033
Silver	16	mg/kg	2.6		1	09/12/16	09/12/16 20:5	7 1033
Thallium	6.5	mg/kg	2.1		1	09/12/16	09/12/16 20:5	7 1033
Zinc	7,200	mg/kg	1,000		100	09/12/16	09/13/16 16:0	0 1033
Sample ID: M1Hpt-13 (4-5)		Date/Time	Sampled:	09/07/	2016 15:20	D PSS Sample	e ID: 1609081	5-017
Matrix: SOIL	!	Date/Time	Received:	09/08/	2016 13:00	0 % S	olids: 86	
Arsenic		ll Method: S				Preparation Meth	nod: 3050B	
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Arsenic	32	mg/kg	0.51		1	09/12/16	09/12/16 21:0	4 1033



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

ANALYTICAL RESULTS

Prepared by:

Prepared for:

Eurofins Lancaster Laboratories Environmental 2425 New Holland Pike Lancaster, PA 17601 Phase Separation Science 6630 Baltimore Nat'l Pike Baltimore MD 21228

Report Date: September 22, 2016

Project: 16090815

Submittal Date: 09/09/2016 Group Number: 1706194 PO Number: 16090815

 Client Sample Description
 (LL) #

 16090815-001 ICOR-SB15 (1-2) Solid
 8577668

 16090815-009 M1Hpt-19 (1-2) Solid
 8577669

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Regulatory agencies do not accredit laboratories for all methods, analytes, and matrices. Our current scopes of accreditation can be viewed at http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/. To request copies of prior scopes of accreditation, contact your project manager.

Electronic Copy To Phase Separation Science

Attn: Report ATT:

Respectfully Submitted,

Project Manager

(717) 556-7236



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: 16090815-001 ICOR-SB15 (1-2) Solid

16090815

LL Sample # SW 8577668 LL Group # 1706194 Account # 09703

Project Name: 16090815

Collected: 09/07/2016 07:55 Phase Separation Science

6630 Baltimore Nat'l Pike ubmitted: 09/09/2016 18:08 Baltimore MD 21228

Submitted: 09/09/2016 18:08 Baltimore MD 2122 Reported: 09/22/2016 11:35

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
Wet	Chemistry	SM 2540 G-1997	%	%	
00111	. Moisture	n.a.	10.9	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: 16090815-001 ICOR-SB15 (1-2) Solid

16090815

LL Sample # SW 8577668 LL Group # 1706194 Account # 09703

Project Name: 16090815

Collected: 09/07/2016 07:55

Phase Separation Science 6630 Baltimore Nat'l Pike

Baltimore MD 21228

Submitted: 09/09/2016 18:08 Reported: 09/22/2016 11:35

CAT No. Analysis Name CAS Number Result EDL Dry Dry Dry Factor

Dioxins/Furans SW-846 8290A Feb 2007 ng/kg ng/kg

Rev 1

12937 2378-TCDD 1746-01-6 0.0670 JQ 0.0344 1

Labeled Compounds %Rec Windows
13C12-2378-TCDD 89 40 - 135

Dioxins/Furans Data Qualifiers:

- B Detected in Method Blank
- U Undetected
- J Estimated concentration between Estimated Detection Limit and Minimum Reporting Level
- E Exceeds calibration range
- C Confirmed quantitation on secondary GC column
- Q EMPC Estimated Maximum Possible Concentration
- F Interference is present
- S Saturation of detection signal



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: 16090815-001 ICOR-SB15 (1-2) Solid

16090815

LL Sample # SW 8577668 LL Group # 1706194 Account # 09703

Project Name: 16090815

Collected: 09/07/2016 07:55

Phase Separation Science 6630 Baltimore Nat'l Pike

Baltimore MD 21228

Submitted: 09/09/2016 18:08 Reported: 09/22/2016 11:35

Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
12937	Dioxins/Furans in Solids-8290	SW-846 8290A Feb 2007 Rev 1	1	16257003	09/15/2016 03:	16 Joseph D Anderson	1
11030	Dioxins/Furans in Solids - Sox	SW-846 8290A Feb 2007 Rev 1	1	16257003	09/13/2016 16:	15 Alex L Barton	1
00111	Moisture	SM 2540 G-1997	1	16264820008A	09/21/2016 01:	54 Scott W Freisher	1



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: 16090815-009 M1Hpt-19 (1-2) Solid

16090815

LL Sample # SW 8577669 LL Group # 1706194 Account # 09703

Project Name: 16090815

Collected: 09/07/2016 15:00

Phase Separation Science 6630 Baltimore Nat'l Pike

Baltimore MD 21228

Submitted: 09/09/2016 18:08 Reported: 09/22/2016 11:35

CAT No.	Analysis Name		CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
Wet	Chemistry	SM 2540	G-1997	%	%	
00111	Moisture	- +1 1	n.a.	12.6	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: 16090815-009 M1Hpt-19 (1-2) Solid

16090815

LL Sample # SW 8577669 LL Group # 1706194 Account # 09703

Project Name: 16090815

Collected: 09/07/2016 15:00

Phase Separation Science 6630 Baltimore Nat'l Pike

Baltimore MD 21228

Submitted: 09/09/2016 18:08 Reported: 09/22/2016 11:35

CAT No. Analysis Name CAS Number Result EDL Dry Dry Dry Factor

Dioxins/Furans SW-846 8290A Feb 2007 ng/kg ng/kg

Rev 1

12937 2378-TCDD 1746-01-6 12.4 0.0404 1

Labeled Compounds%RecWindows13C12-2378-TCDD9040 - 135

Dioxins/Furans Data Qualifiers:

B Detected in Method Blank

U Undetected

J Estimated concentration between Estimated Detection Limit and Minimum Reporting Level

E Exceeds calibration range

C Confirmed quantitation on secondary GC column

Q EMPC - Estimated Maximum Possible Concentration

F Interference is present

S Saturation of detection signal



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: 16090815-009 M1Hpt-19 (1-2) Solid

16090815

LL Sample # SW 8577669 LL Group # 1706194 Account # 09703

Project Name: 16090815

Collected: 09/07/2016 15:00

Phase Separation Science 6630 Baltimore Nat'l Pike

Baltimore MD 21228

Submitted: 09/09/2016 18:08 Reported: 09/22/2016 11:35

Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
12937	Dioxins/Furans in Solids-8290	SW-846 8290A Feb 2007 Rev 1	1	16257003	09/15/2016 04:13	Joseph D Anderson	1
11030	Dioxins/Furans in Solids - Sox	SW-846 8290A Feb 2007 Rev 1	1	16257003	09/13/2016 16:15	Alex L Barton	1
00111	Moisture	SM 2540 G-1997	1	16264820008A	09/21/2016 01:54	Scott W Freisher	1



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Quality Control Summary

Client Name: Phase Separation Science Group Number: 1706194

Reported: 09/22/2016 11:35

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Method Blank

Analysis Name Result EDL $ng/kg \qquad \qquad ng/kg \\$

Batch number: 16257003 Sample number(s): 8577668-8577669

2378-TCDD N.D. 0.0170

LCS/LCSD

Analysis Name	LCS Spike Added %	LCS Conc %	LCSD Spike Added %	LCSD Conc %	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
	-0	-0	70	-0					
Batch number: 16264820008A	Sample numbe	r(s): 8577	668-8577669						
Moisture	89.5	89.47			100		99-101		
Analysis Name	OPR Spike	OPR	OPRD Spike	OPRD	OPR	OPRD	OPR/OPRD	RPD	RPD
	Added	Conc	Added	Conc	%REC	%REC	Limits		Max
	ng/kg	ng/kg	ng/kg	ng/kg					
Batch number: 16257003	Sample numbe	r(s): 8577	668-8577669						
2378-TCDD	20	17.72			89		67-158		

Laboratory Duplicate

Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	BKG Conc	DUP Conc	DUP RPD	DUP RPD Max
	%	%		
Batch number: 16264820008A	Sample number(s):	8577668-8577669 BKG:	P581316	
Moisture	14.25	12.62	12*	5

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: Dioxins/Furans in Solids-8290

Batch number: 16257003

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ / MRL.
- (2) The unspiked result was more than four times the spike added.

P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Quality Control Summary

Client Name: Phase Separation Science Group Number: 1706194

Reported: 09/22/2016 11:35

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

8577668	89	
8577669	90	
Blank	78	
OPR	86	
Limits:	40-135	

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

^{*-} Outside of specification

⁽¹⁾ The result for one or both determinations was less than five times the LOQ / MRL.

⁽²⁾ The unspiked result was more than four times the spike added.



9703 MOCKY 8577668-69

Chain of Custody Form for Subcontracted Analyses

Page 1 of 1

Phase Separation Science, Inc	cience, Inc		O M	. oN O M	1/00001	Samp	Samples Transferred To:	2
6630 Baltimore National Dive	tional Diba). *		TOUYUOLO	Euror	IIIS LAIICASICI LAUS -	Z
Baltimore, MD 21228	228		P.O.	P.O. No. :	Transfer of the state of the st	2425	2425 New Holland Pike	
Phone: (410) 747-8770	3770		Proj	Project Number: N/A	N/A	Lanca	Lancaster, PA 17601	
Fax: (410) /66-6/23	3		Rep	Report To LOD: No	No 22 (2) 270 ON	- Part o	Part of Eurofins. Transport ma	t m
For Questions o	For Questions or issues please contact: Simon Crisp	non Crisp		Report D	Report Due On :09/15/16 05:00	Phone	717-656-2300	
Lab	Field	Date	Time	Matrix	Analyses Required	Method	Type of	14
Sample ID	Sample ID	Sampled	Sampled Sampled				Container	

manager (for courier) S

Preservative

T000 COOL

4 OZ WM GLASS 4 OZ WM GLASS

SW8290

Dioxins 2378 TCDD only Dioxins 2378 TCDD only

Solid Solid

15:00

09/02/16

M1Hpt-19 (1-2)

16090815-009

16090815-001

Carrier: LANCASTER COUPLER Send Report Attn: reporting applase on line.com Data Deliverables Required: COA Airbill No.:

Send InvoiceAttn: invoicing@phaseonline.com

Perform Q.C. on Sample:

Comments: DIOXINS - STD TAT PLEASE. Condition Upon Receipt:

Samples Received By: Samples Samples Received By Time / Staff Samples Received By: Time/3:35 Date: 9-9-16 Date 9-9-7C Samples Relinquished By Samples Relinquished By(: Samples Relinquished By:

Time: Date: 9- 9-//

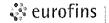
Matrix Solid

Method SW8290

Eurofins Lancaster Labs - PA

Sub-Contractor

Analyte Name 2,3,7,8-Tetrachlorodibenzo-p-



Sample Administration Receipt Documentation Log

Doc Log ID:

161663

Group Number(s): 1706194

Client: Phase Seperation

Delivery and Receipt Information

Delivery Method:

ELLE Courier

Arrival Timestamp:

09/09/2016 18:08

Number of Packages:

1

Number of Projects:

1

State/Province of Origin:

MD

Arrival Condition Summary

Shipping Container Sealed:

Yes

Sample IDs on COC match Containers:

Yes

Custody Seal Present:

No

Sample Date/Times match COC:

Yes

Samples Chilled:

Yes

VOA Vial Headspace ≥ 6mm:

N/A

Paperwork Enclosed:

Yes

Total Trip Blank Qty:

0

Samples Intact:

Yes

Air Quality Samples Present:

No

Missing Samples:

No

Extra Samples:

No

Discrepancy in Container Qty on COC:

No

Unpacked by Melvin Sanchez (8943) at 23:14 on 09/09/2016

Samples Chilled Details

Thermometer Types:

DT = Digital (Temp. Bottle)

IR = Infrared (Surface Temp)

All Temperatures in °C.

Thermometer ID Cooler#

Corrected Temp

Therm, Type DT

Ice Type

Ice Present?

Ice Container

Elevated Temp?

DT121

2.3

Wet

Bagged

Ν



Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL N.D.	Reporting Limit none detected	BMQL MPN	Below Minimum Quantitation Level Most Probable Number
TNTC	Too Numerous To Count	CP Units	cobalt-chloroplatinate units
IU	International Units	NTU	nephelometric turbidity units
umhos/cm	micromhos/cm	ng	nanogram(s)
С	degrees Celsius	F	degrees Fahrenheit
meq	milliequivalents	lb.	pound(s)
g	gram(s)	kg	kilogram(s)
μg	microgram(s)	mg	milligram(s)
mL	milliliter(s)	Ĺ	liter(s)
m3	cubic meter(s)	μL	microliter(s)
		pg/L	picogram/liter

< less than

> greater than

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an

as-received basis.

Laboratory Data Qualifiers:

B - Analyte detected in the blank

C - Result confirmed by reanalysis

E - Concentration exceeds the calibration range

J (or G, I, X) - estimated value ≥ the Method Detection Limit (MDL or DL) and < the Limit of Quantitation (LOQ or RL)

P - Concentration difference between the primary and confirmation column >40%. The lower result is reported.

U - Analyte was not detected at the value indicated

V - Concentration difference between the primary and confirmation column >100%. The reporting limit is raised due to this disparity and evident interference...

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods. Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" are not performed within 15 minutes.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.



Case Narrative Summary

Client Name: Icor Ltd.

Project Name: Robinson Terminal North

Work Order Number(s): 16090815

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

The analyses of chlorine, pH, dissolved oxygen, temperature and sulfite for drinking water and non-potable samples tested for compliance have a maximum holding time of 15 minutes. As such, all laboratory analyses for these analytes exceed holding times.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

Sample(s) received at a temperature greater than 6 degrees C and ice was present.

Analytical:

RCRA Metals

Batch: 135714

Intermediate LLCCV has a thallium recovery of 131%, which is above the control limits of 70-130%. This affects samples 007 and 016, which cannot be rerun straight due to a high concentration of mercury.

Organochlorine Pesticides

Batch: 135800

The recoveries of 4,4-DDT and Methoxychlor in closing CCVs were 71% and 76%(80-120%) due to sample matrix. All samples were confirmed on second column.

Laboratory control sample and/or laboratory control sample duplicate (LCS/LCSD) exceedances identified; see LCS summary form.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.



Analytical Data Package Information Summary

Work Order(s): 16090815

Report Prepared For: Icor Ltd., Middleburg, VA Project Name: Robinson Terminal North Project Manager: Mike Bruzzesi

Method	Client Sample Id	Analysis Type	Lab Sample Id	Analyst	Mtx	Prep Batch	Analytical Batch	Sampled	Prepared	Analyzed
ASTM D2216 05	ICOR-SB3 (10.5-11.5)	Initial	16090815-003	1059	S	135699	135699	09/07/2016	09/12/2016 16:39	09/12/2016 16:39
	M1Hpt-05 (1-2)	Initial	16090815-004	1059	S	135699	135699	09/07/2016	09/12/2016 16:39	09/12/2016 16:39
	M1Hpt-12 (1-2)	Initial	16090815-005	1059	S	135699	135699	09/07/2016	09/12/2016 16:39	09/12/2016 16:39
	M1Hpt-18 (1-2)	Initial	16090815-006	1059	S	135699	135699	09/07/2016	09/12/2016 16:39	09/12/2016 16:39
	M1Hpt-17 (1-2)	Initial	16090815-007	1059	S	135699	135699	09/07/2016	09/12/2016 16:39	09/12/2016 16:39
	M1Hpt-17 (4-5)	Initial	16090815-008	1059	S	135699	135699	09/07/2016	09/12/2016 16:39	09/12/2016 16:39
	M1Hpt-19 (1-2)	Initial	16090815-009	1059	S	135699	135699	09/07/2016	09/12/2016 16:39	09/12/2016 16:39
	M1Hpt-19 (4-5)	Initial	16090815-010	1059	S	135699	135699	09/07/2016	09/12/2016 16:39	09/12/2016 16:39
	ICOR-SB14 (1-2)	Initial	16090815-011	1059	S	135699	135699	09/07/2016	09/12/2016 16:39	09/12/2016 16:39
	ICOR-SB14 (4-5)	Initial	16090815-012	1059	S	135699	135699	09/07/2016	09/12/2016 16:39	09/12/2016 16:39
	ECS-B7 (1-2)	Initial	16090815-013	1059	S	135699	135699	09/07/2016	09/12/2016 16:39	09/12/2016 16:39
	ECS-B7 (5-6)	Initial	16090815-014	1059	S	135699	135699	09/07/2016	09/12/2016 16:39	09/12/2016 16:39
	ICOR-SB9	Initial	16090815-015	1059	S	135699	135699	09/07/2016	09/12/2016 16:39	09/12/2016 16:39
	M1Hpt-13 (1-2)	Initial	16090815-016	1059	S	135699	135699	09/07/2016	09/12/2016 16:39	09/12/2016 16:39
	M1Hpt-13 (4-5)	Initial	16090815-017	1059	S	135699	135699	09/07/2016	09/12/2016 16:39	09/12/2016 16:39
SW-846 6020 A	M1Hpt-05 (1-2)	Initial	16090815-004	1033	S	62479	135714	09/07/2016	09/12/2016 09:35	09/12/2016 19:00
	M1Hpt-18 (1-2)	Initial	16090815-006	1033	S	62479	135714	09/07/2016	09/12/2016 09:35	09/12/2016 19:39
	M1Hpt-17 (4-5)	Initial	16090815-008	1033	S	62479	135714	09/07/2016	09/12/2016 09:35	09/12/2016 20:18
	M1Hpt-19 (1-2)	Initial	16090815-009	1033	S	62479	135714	09/07/2016	09/12/2016 09:35	09/12/2016 20:25
	ICOR-SB14 (1-2)	Initial	16090815-011	1033	S	62479	135714	09/07/2016	09/12/2016 09:35	09/12/2016 20:38
	ICOR-SB14 (4-5)	Initial	16090815-012	1033	S	62479	135714	09/07/2016	09/12/2016 09:35	09/12/2016 20:44
	M1Hpt-13 (4-5)	Initial	16090815-017	1033	S	62479	135714	09/07/2016	09/12/2016 09:35	09/12/2016 21:04
	62479-1-BKS	BKS	62479-1-BKS	1033	S	62479	135714		09/12/2016 09:35	09/12/2016 18:53
	62479-1-BLK	BLK	62479-1-BLK	1033	S	62479	135714		09/12/2016 09:35	09/12/2016 18:46
	M1Hpt-05 (1-2) S	MS	16090815-004 S	1033	S	62479	135714	09/07/2016	09/12/2016 09:35	09/12/2016 19:06
	M1Hpt-05 (1-2) SD	MSD	16090815-004 SD	1033	S	62479	135714	09/07/2016	09/12/2016 09:35	09/12/2016 19:13
	M1Hpt-12 (1-2)	Reanalysis	16090815-005	1033	S	62479	135765	09/07/2016	09/12/2016 09:35	09/13/2016 15:21
	M1Hpt-19 (4-5)	Reanalysis	16090815-010	1033	S	62479	135765	09/07/2016	09/12/2016 09:35	09/13/2016 15:40

Page 28 of 42

Version 1.001



Analytical Data Package Information Summary

Work Order(s): 16090815
Report Prepared For: Icor Ltd., Middleburg, VA
Project Name: Robinson Terminal North
Project Manager: Mike Bruzzesi

Method	Client Sample Id	Analysis Type	Lab Sample Id	Analyst	Mtx	Prep Batch	Analytical Batch	Sampled	Prepared	Analyzed
SW-846 6020 A	M1Hpt-17 (1-2)	Initial	16090815-007	1033	∞	62479	135714	09/07/2016	09/12/2016 09:35	09/12/2016 20:12
	ECS-B7 (1-2)	Initial	16090815-013	1033	S	62479	135714	09/07/2016	09/12/2016 09:35	09/12/2016 20:51
	M1Hpt-13 (1-2)	Initial	16090815-016	1033	S	62479	135714	09/07/2016	09/12/2016 09:35	09/12/2016 20:57
	ECS-B7 (1-2)	Reanalysis	16090815-013	1033	S	62479	135765	09/07/2016	09/12/2016 09:35	09/13/2016 14:27
	M1Hpt-17 (1-2)	Reanalysis	16090815-007	1033	S	62479	135765	09/07/2016	09/12/2016 09:35	09/13/2016 15:27
	M1Hpt-13 (1-2)	Reanalysis	16090815-016	1033	S	62479	135765	09/07/2016	09/12/2016 09:35	09/13/2016 16:00
SW-846 8015 C	ICOR-SB3 (10.5-11.5)	Initial	16090815-003	1045	S	62496	135735	09/07/2016	09/12/2016 11:32	09/14/2016 01:58
	62496-1-BKS	BKS	62496-1-BKS	1045	S	62496	135735		09/12/2016 11:32	09/13/2016 12:08
	62496-1-BLK	BLK	62496-1-BLK	1045	S	62496	135735		09/12/2016 11:32	09/13/2016 11:41
	62496-1-BSD	BSD	62496-1-BSD	1045	S	62496	135735		09/12/2016 11:32	09/13/2016 12:41
	Disposal S	MS	16090716-001 S	1045	S	62496	135735	09/06/2016	09/12/2016 11:32	09/13/2016 14:16
	Disposal SD	MSD	16090716-001 SD	1045	S	62496	135735	09/06/2016	09/12/2016 11:32	09/13/2016 14:44
	M1Hpt-08 (36.5-40)	Initial	16090815-002	1045	×	62475	135782	09/07/2016	09/12/2016 08:39	09/15/2016 09:50
	62475-1-BKS	BKS	62475-1-BKS	1045	M	62475	135782		09/12/2016 08:39	09/14/2016 14:25
	62475-1-BLK	BLK	62475-1-BLK	1045	W	62475	135782	1	09/12/2016 08:39	09/14/2016 14:00
	62475-1-BSD	BSD	62475-1-BSD	1045	W	62475	135782	1	09/12/2016 08:39	09/14/2016 14:25
	ECS-B7 (5-6)	Initial	16090815-014	1045	S	62505	135802	09/07/2016	09/13/2016 08:32	09/14/2016 07:24
	62505-1-BKS	BKS	62505-1-BKS	1045	S	62505	135802	1	09/13/2016 08:32	09/14/2016 03:38
	62505-1-BLK	BLK	62505-1-BLK	1045	S	62505	135802	1	09/13/2016 08:32	09/14/2016 03:13
	62505-1-BSD	BSD	62505-1-BSD	1045	S	62505	135802		09/13/2016 08:32	09/14/2016 04:03
	1614-02 S	MS	16090903-001 S	1045	S	62505	135802	09/08/2016	09/13/2016 08:32	09/14/2016 03:38
	1614-02 SD	MSD	16090903-001 SD	1045	S	62505	135802	09/08/2016	09/13/2016 08:32	09/14/2016 04:03
SW-846 8015C	ECS-B7 (5-6)	Initial	16090815-014	1035	S	62486	135670	09/07/2016	09/09/2016 09:37	09/09/2016 14:16
	62486-2-BKS	BKS	62486-2-BKS	1035	∞	62486	135670		09/09/2016 09:37	09/09/2016 12:44
	62486-2-BLK	BLK	62486-2-BLK	1035	S	62486	135670		09/09/2016 09:37	09/09/2016 11:44
	ECS-B7 (5-6) S	MS	16090815-014 S	1035	S	62486	135670	09/07/2016	09/09/2016 09:37	09/09/2016 18:19
	ECS-B7 (5-6) SD	MSD	16090815-014 SD	1035	S	62486	135670	09/07/2016	09/09/2016 09:37	09/09/2016 18:50
SW-846 8081 B	ECS-B7 (1-2)	Initial	16090815-013	1029	S	62498	135800	09/07/2016	09/12/2016 15:29	09/14/2016 19:16

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Analytical Data Package Information Summary

Work Order(s): 16090815

Report Prepared For: Icor Ltd., Middleburg, VA Project Name: Robinson Terminal North Project Manager: Mike Bruzzesi

Method	Client Sample Id	Analysis Type Lab Sample	Lab Sample Id	Analyst	Mtx	Prep Batch	Prep Batch Analytical Batch	Sampled	Prepared	Analyzed
		,			ł	9	9			
SW-846 8081 B	62498-1-BKS	BKS	62498-1-BKS	1029	S	62498	135800		09/12/2016 15:29	09/14/2016 22:31
	62498-1-BLK	BLK	62498-1-BLK	1029	S	62498	135800		09/12/2016 15:29	09/14/2016 12:43
	62498-1-BSD	BSD	62498-1-BSD	1029	S	62498	135800		09/12/2016 15:29	09/14/2016 22:03
	M1Hpt-16 (4-5) S	MS	16090912-005 S	1029	S	62498	135800	09/08/2016	09/12/2016 15:29	09/14/2016 14:08
	M1Hpt-16 (4-5) SD	MSD	16090912-005 SD	1029	S	62498	135800	09/08/2016	09/12/2016 15:29	09/14/2016 15:04
SW-846 8082 A	ICOR-SB3 (10.5-11.5)	Initial	16090815-003	1029	S	62469	135705	09/07/2016	09/09/2016 12:18	09/12/2016 10:09
	ECS-B7 (1-2)	Initial	16090815-013	1029	S	62469	135705	09/07/2016	09/09/2016 12:18	09/12/2016 10:38
	ICOR-SB9	Initial	16090815-015	1029	S	62469	135705	09/07/2016	09/09/2016 12:18	09/12/2016 11:07
	62469-1-BKS	BKS	62469-1-BKS	1029	S	62469	135705		09/09/2016 12:18	09/12/2016 10:38
	62469-1-BLK	BLK	62469-1-BLK	1029	S	62469	135705		09/09/2016 12:18	09/12/2016 10:09
	62469-1-BSD	BSD	62469-1-BSD	1029	S	62469	135705	!	09/09/2016 12:18	09/12/2016 11:07
	NEBBC-74, 75 S	MS	16090830-002 S	1029	S	65469	135705	08/31/2016	09/09/2016 12:18	09/12/2016 11:36
	NEBBC-74, 75 SD	MSD	16090830-002 SD	1029	S	62469	135705	08/31/2016	09/09/2016 12:18	09/12/2016 12:05
SW-846 8151 A	ECS-B7 (1-2)	Initial	16090815-013	1029	S	62477	135724	09/07/2016	09/12/2016 09:33	09/13/2016 17:21
	62477-1-BKS	BKS	62477-1-BKS	1029	S	62477	135724	!	09/12/2016 09:33	09/13/2016 10:23
	62477-1-BLK	BLK	62477-1-BLK	1029	S	62477	135724	!	09/12/2016 09:33	09/13/2016 09:50
	62477-1-BSD	BSD	62477-1-BSD	1029	S	62477	135724		09/12/2016 09:33	09/13/2016 10:55
	1614-02 S	MS	16090903-001 S	1029	S	62477	135724	09/08/2016	09/12/2016 09:33	09/13/2016 11:28
	1614-02 SD	MSD	16090903-001 SD	1029	∞	62477	135724	09/08/2016	09/12/2016 09:33	09/13/2016 12:00
SW-846 8260 B	ECS-B7 (5-6)	Initial	16090815-014	1011	S	62514	135708	09/07/2016	09/12/2016 10:24	09/12/2016 18:49
	62514-1-BKS	BKS	62514-1-BKS	1011	S	62514	135708	!	09/12/2016 10:24	09/12/2016 13:27
	62514-1-BLK	BLK	62514-1-BLK	1011	S	62514	135708		09/12/2016 10:24	09/12/2016 14:06
	NEBBC-74, 75 S	MS	16090830-002 S	1011	S	62514	135708	08/31/2016	09/12/2016 10:24	09/12/2016 15:30
	NEBBC-74, 75 SD	MSD	16090830-002 SD	1011	S	62514	135708	08/31/2016	09/12/2016 10:24	09/12/2016 16:10

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PHASE SEPARATION SCIENCE, INC. QC Summary 16090815

Icor Ltd. Robinson Terminal North

		1 30	001113011	Terrimar North		
Analytical Method Seq Number: PSS Sample ID:	: SW-846 8015 C 135782 16090815-002		Matrix:	Ground Water	Prep Method: Date Prep:	
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
o-Terphenyl		89		46-111	%	09/15/16 09:50
Analytical Method Seq Number: PSS Sample ID:	: SW-846 8082 A 135705 16090815-003		Matrix:	Soil	Prep Method: Date Prep:	
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
Decachlorobipheny Tetrachloro-m-xyler		96 87		61-150 42-142		09/12/16 10:09 09/12/16 10:09
Analytical Method Seq Number: PSS Sample ID:	: SW-846 8015 C 135735 16090815-003		Matrix:	Soil	Prep Method: Date Prep:	
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
o-Terphenyl		94		34-133	%	09/14/16 01:58
Analytical Method Seq Number: PSS Sample ID:	: SW-846 8082 A 135705 16090815-013		Matrix:	Soil	Prep Method: Date Prep:	
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
Decachlorobipheny Tetrachloro-m-xyler		92 88		61-150 42-142		09/12/16 10:38 09/12/16 10:38
Analytical Method Seq Number: PSS Sample ID:	: SW-846 8151 A 135724 16090815-013		Matrix:	Soil	Prep Method: Date Prep:	
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
2,4-Dichlorophenyla	acetic Acid	110		61-144	%	09/13/16 17:21

PHASE SEPARATION SCIENCE, INC. QC Summary 16090815

Icor Ltd. Robinson Terminal North

			001110011		ilai i tortii		
Analytical Method	: SW-846 8081 B					Prep Method:	SW3550C
Seq Number:	135800		Matrix:	Soil		Date Prep:	09/12/2016
PSS Sample ID:	16090815-013						
Surrogate		%Rec	Flag		Limits	Units	Analysis Date
Decachlorobipheny	4	117			23-165	%	09/14/16 19:16
Tetrachloro-m-xyle	ne	102			31-145	%	09/14/16 19:16
Analytical Method	: SW-846 8015 C					Prep Method:	SW3550C
Seq Number:	135802		Matrix:	Soil		Date Prep:	
PSS Sample ID:	16090815-014					·	
Surrogate		%Rec	Flag		Limits	Units	Analysis
Garrogato							Date
o-Terphenyl		102			34-133	%	09/14/16 07:24
A a la di a a la Martina a -la	- CW 04C 0045C					Duran Mada ad	CMEO20
Analytical Method Seq Number:	135670		Matrix:	Soil		Prep Method: Date Prep:	
PSS Sample ID:	16090815-014		Mauix.	3011		Date Fiep.	09/09/2010
PSS Sample ID.	10090613-014						
Surrogate		%Rec	Flag		Limits	Units	Analysis Date
a,a,a-Trifluorotolue	ne	93			50-122	%	09/09/16 14:16
A b - d' b M - db d	- OW 040 0000 B					D M. II . I	CMEOSE
Analytical Method Seq Number:	135708		Matrix:	Soil		Prep Method: Date Prep:	
PSS Sample ID:	16090815-014		iviau ix.	3011		Date Fieb.	09/12/2010
roo Sample ID.	10090615-014						
Surrogate		%Rec	Flag		Limits	Units	Analysis Date
4-Bromofluorobenz		102			82-126	%	09/12/16 18:49
Dibromofluorometh	ane	96			92-113	%	09/12/16 18:49
Toluene-D8		100			94-105	%	09/12/16 18:49
Analytical Method	: SW-846 8082 A					Prep Method:	SW3550C
Seq Number:	135705		Matrix:	Soil		Date Prep:	
PSS Sample ID:	16090815-015						
Surrogate		%Rec	Flag		Limits	Units	Analysis Date
Decachlorobipheny	4	84			61-150	%	09/12/16 11:07
Tetrachloro-m-xyle		87			42-142	%	09/12/16 11:07

F = RPD exceeded the laboratory control limits

X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits

L = Recovery of BS,BSD or both below the laboratory control limits

QC Summary 16090815

Icor Ltd. Robinson Terminal North

Analytical Method: SW-846 6020 A
Seq Number: 135714 Matrix: Solid Prep Method: SW3050B
Date Prep: 09/12/16

MB Sample Id: 62479-1-BLK LCS Sample Id: 62479-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Analysis Flag Date
Antimony	<2.467	19.74	21.59	109	80-120	mg/kg	09/12/16 18:53
Arsenic	< 0.4934	19.74	21.14	107	80-120	mg/kg	09/12/16 18:53
Beryllium	<2.467	19.74	19.80	100	80-120	mg/kg	09/12/16 18:53
Cadmium	<2.467	19.74	19.96	101	80-120	mg/kg	09/12/16 18:53
Chromium	<2.467	19.74	22.25	113	80-120	mg/kg	09/12/16 18:53
Copper	<2.467	19.74	21.57	109	80-120	mg/kg	09/12/16 18:53
Lead	<2.467	19.74	21.64	110	80-120	mg/kg	09/12/16 18:53
Mercury	< 0.09869	0.4934	0.5230	106	80-120	mg/kg	09/12/16 18:53
Nickel	<2.467	19.74	20.33	103	80-120	mg/kg	09/12/16 18:53
Selenium	<2.467	19.74	19.95	101	80-120	mg/kg	09/12/16 18:53
Silver	<2.467	19.74	20.17	102	80-120	mg/kg	09/12/16 18:53
Thallium	<1.974	19.74	17.68	90	80-120	mg/kg	09/12/16 18:53
Zinc	<9.869	98.69	99.62	101	80-120	mg/kg	09/12/16 18:53

Analytical Method: SW-846 6020 A

Seq Number: 135714 Matrix: Soil Prep Method: SW3050B

Date Prep: 09/12/16

Parent Sample Id: 16090815-004 MS Sample Id: 16090815-004 S MSD Sample Id: 16090815-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Antimony	<2.395	19.16	16.47	86	34.44	79	75-125	71	30	mg/kg	09/12/16 19:06	F
Arsenic	2.176	19.16	20.64	96	40.81	89	75-125	66	30	mg/kg	09/12/16 19:06	F
Beryllium	<2.395	19.16	18.45	96	36.81	85	75-125	66	30	mg/kg	09/12/16 19:06	F
Cadmium	<2.395	19.16	19.54	102	39.45	91	75-125	68	30	mg/kg	09/12/16 19:06	F
Chromium	6.477	19.16	28.90	117	57.12	116	75-125	66	30	mg/kg	09/12/16 19:06	F
Copper	7.813	19.16	28.29	107	55.22	109	75-125	64	30	mg/kg	09/12/16 19:06	F
Lead	285.9	19.16	308.3	117	610.9	747	75-125	66	30	mg/kg	09/12/16 19:06	XF
Mercury	< 0.09579	0.4790	0.5221	109	1.088	100	75-125	70	30	mg/kg	09/12/16 19:06	F
Nickel	2.855	19.16	21.80	99	43.61	94	75-125	67	30	mg/kg	09/12/16 19:06	F
Selenium	<2.395	19.16	18.06	94	36.46	84	75-125	67	30	mg/kg	09/12/16 19:06	F
Silver	<2.395	19.16	19.58	102	40.32	93	75-125	69	30	mg/kg	09/12/16 19:06	F
Thallium	<1.916	19.16	17.06	89	35.14	81	75-125	69	20	mg/kg	09/12/16 19:06	F
Zinc	23.35	95.79	115.3	96	222.4	91	75-125	63	30	mg/kg	09/12/16 19:06	F

QC Summary 16090815

Icor Ltd. Robinson Terminal North

Analytical Method	l: SW-846 8081 B							Pr	ep Metho	od: SW	/3550C	
Seq Number:	135800			Matrix:	Solid				Date Pre	ep: 09/	12/16	
MB Sample Id:	62498-1-BLK		LCS San	nple ld:	62498-1-	BKS		LCSI) Sample	e ld: 624	198-1-BSD	
Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
alpha-BHC	<3.968	19.84	19.18	97	18.68	95	58-120	3	25	ug/kg	09/14/16 22:31	
gamma-BHC (Lindar	e) <3.968	19.84	18.23	92	17.88	91	57-120	2	25	ug/kg	09/14/16 22:31	
beta-BHC	<3.968	19.84	19.34	97	18.15	92	59-118	6	25	ug/kg	09/14/16 22:31	
delta-BHC	<3.968	19.84	21.21	107	20.46	104	52-123	4	25	ug/kg	09/14/16 22:31	
Heptachlor	<3.968	19.84	19.10	96	18.46	94	44-130	3	25	ug/kg	09/14/16 22:31	
Aldrin	<3.968	19.84	18.93	95	18.42	93	59-123	3	25	ug/kg	09/14/16 22:31	
Heptachlor epoxide	<3.968	19.84	20.08	101	19.52	99	61-119	3	25	ug/kg	09/14/16 22:31	
gamma-Chlordane	<3.968	19.84	20.82	105	20.18	102	61-122	3	25	ug/kg	09/14/16 22:31	
alpha-Chlordane	<3.968	19.84	18.81	95	18.25	93	61-123	3	25	ug/kg	09/14/16 22:31	
4,4-DDE	<3.968	19.84	17.61	89	16.48	84	49-131	7	25	ug/kg	09/14/16 22:31	
Endosulfan I	<3.968	19.84	22.43	113	22.08	112	66-118	2	25	ug/kg	09/14/16 22:31	
Dieldrin	<3.968	19.84	19.98	101	19.35	98	60-122	3	25	ug/kg	09/14/16 22:31	
Endrin	<3.968	19.84	21.01	106	19.56	99	39-133	7	25	ug/kg	09/14/16 22:31	
4,4-DDD	<3.968	19.84	20.38	103	19.70	100	44-130	3	25	ug/kg	09/14/16 22:31	
Endosulfan II	<3.968	19.84	24.03	121	22.90	116	59-118	5	25	ug/kg	09/14/16 22:31	Н
4,4-DDT	<3.968	19.84	23.59	119	21.58	109	28-134	9	25	ug/kg	09/14/16 22:31	
Endrin aldehyde	<3.968	19.84	21.35	108	20.31	103	51-129	5	25	ug/kg	09/14/16 22:31	
Methoxychlor	<3.968	19.84	21.59	109	19.78	100	33-135	9	25	ug/kg	09/14/16 22:31	
Endosulfan sulfate	<3.968	19.84	25.77	130	24.43	124	54-124	5	25	ug/kg	09/14/16 22:31	Н
Endrin ketone	<3.968	19.84	22.82	115	21.82	111	58-123	4	25	ug/kg	09/14/16 22:31	
Surrogate	MB %Red	MB Flag			LCS Flag	LCS Resu			imits	Units	Analysis Date	
Decachlorobiphenyl	109		1	27		117	•	2	3-165	%	09/14/16 22:31	
Tetrachloro-m-xylene	e 111		9	98		95		3	1-145	%	09/14/16 22:31	l

Prep Method: SW3550C Analytical Method: SW-846 8082 A Date Prep: 09/09/16 Seq Number: 135705 Matrix: Solid MB Sample Id: 62469-1-BLK LCS Sample Id: 62469-1-BKS LCSD Sample Id: 62469-1-BSD LCS %RPD RPD Units **Analysis** MB Spike LCSD LCSD Limits **Parameter**

Result %Rec

Result Amount

						,						
PCB-1016	< 0.05076	0.5076	0.3899	77	0.3929	79	60-110	1	25	mg/kg	09/12/16 10:38	
PCB-1260	<0.05076	0.5076	0.4672	92	0.4710	95	60-98	1	25	mg/kg	09/12/16 10:38	
Surrogate	MB %Rec	MB Flag	LCS Result		CS lag	LCSD Result		L	imits	Units	Analysis Date	
Decachlorobiphenyl	100		103			107		6	1-150	%	09/12/16 10:38	
Tetrachloro-m-xylene	76		79			82		4	2-142	%	09/12/16 10:38	

Result %Rec

Limit

Flag

Date

QC Summary 16090815

Icor Ltd. Robinson Terminal North

Analytical Method	: SW-846 8151 A							Pre	ep Metho	od: SW	'8151A_PREP	
Seq Number:	135724			Matrix:	Solid				Date Pre	p: 09/	12/16	
MB Sample Id:	62477-1-BLK		LCS San	nple Id:	62477-1-	BKS		LCSD	Sample	ld: 624	77-1-BSD	
Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Dalapon	<493.6	1481	1096	74	1186	80	66-117	8	25	ug/kg	09/13/16 10:23	
Dicamba	<19.74	59.23	66.44	112	66.50	112	73-126	0	25	ug/kg	09/13/16 10:23	
MCPP	<19740	59230	51110	86	50840	86	51-138	1	25	ug/kg	09/13/16 10:23	
MCPA	<19740	59230	51210	86	50770	85	70-133	1	25	ug/kg	09/13/16 10:23	
Dichloroprop	<197.4	592.3	664.5	112	650.1	109	88-162	2	25	ug/kg	09/13/16 10:23	
2,4-D	<197.4	592.3	668.5	113	654.7	110	66-133	2	25	ug/kg	09/13/16 10:23	
2,4,5-TP (Silvex)	<19.74	59.23	61.11	103	58.37	98	71-126	5	25	ug/kg	09/13/16 10:23	
2,4,5-T	<19.74	59.23	61.20	103	57.98	98	66-125	5	25	ug/kg	09/13/16 10:23	
Dinoseb	<98.72	296.2	245.8	83	233.9	79	52-101	5	25	ug/kg	09/13/16 10:23	
2,4-DB	<197.4	592.3	625.5	106	586.1	99	63-134	7	25	ug/kg	09/13/16 10:23	
Surrogate	MB %Rec	MB Flag		.CS sult	LCS Flag	LCS Resu			mits	Units	Analysis Date	
2,4-Dichlorophenylace	etic Acid 97		9	98		104		61	-144	%	09/13/16 10:23	3

Analytical Method: SW-846 8015 C Prep Method: SW3510C Seq Number: 135782 Matrix: Water Date Prep: 09/12/16 LCS Sample Id: 62475-1-BKS LCSD Sample Id: 62475-1-BSD MB Sample Id: 62475-1-BLK %RPD RPD МВ LCS LCS **Spike** Units LCSD LCSD Limits **Analysis Parameter** Flag Result **Amount** Result %Rec Limit Date Result %Rec TPH-DRO (Diesel Range Organics) <0.1000 0.9411 0.8283 83 41-123 13 20 09/14/16 14:25 mg/L MB MB LCS **LCS** LCSD **LCSD** Limits Units **Analysis** Surrogate Flag Date %Rec Flag Result Result Flag o-Terphenyl 78 89 77 % 09/14/16 14:25 46-111

Analytical Method: SW-846 8015 C SW3550C Prep Method: Seq Number: 135735 Matrix: Solid Date Prep: 09/12/16 LCS Sample Id: 62496-1-BKS LCSD Sample Id: 62496-1-BSD MB Sample Id: 62496-1-BLK MB Spike LCS LCS Limits %RPD RPD Units Analysis LCSD LCSD **Parameter** Flag Result Amount Result %Rec Result %Rec Limit Date TPH-DRO (Diesel Range Organics) <10.13 27.80 23 25 09/13/16 12:08 33.76 22.15 66 54-123 mg/kg MB **LCS** LCS **LCSD** MB **LCSD** Limits Units **Analysis** Surrogate Flag Flag Date %Rec Flag Result Result

100

83

78

o-Terphenyl

34-133

%

09/13/16 12:08

QC Summary 16090815

Icor Ltd. Robinson Terminal North

Analytical Met	hod: SW-846 8015 C	
o	405000	

Prep Method: Seq Number: Date Prep: 09/13/16 135802 Matrix: Solid LCS Sample Id: 62505-1-BKS LCSD Sample Id: 62505-1-BSD MB Sample Id: 62505-1-BLK

LCS %RPD RPD LCS MB Spike LCSD LCSD Limits Units **Analysis Parameter** Flag Limit Result **Amount** Result %Rec Date %Rec Result TPH-DRO (Diesel Range Organics) <10.05 33.49 28.43 85 29.89 89 54-123 5 25 mg/kg 09/14/16 03:38

MB MB LCS LCS LCSD **LCSD** Limits Units **Analysis** Surrogate Flag Date %Rec Flag Result Result Flag o-Terphenyl 99 81 84 34-133 % 09/14/16 03:38

Analytical Method: SW-846 8015C SW5030 Prep Method: Seq Number: 135670 Matrix: Solid Date Prep: 09/09/16

LCS Sample Id: 62486-2-BKS MB Sample Id: 62486-2-BLK

МВ Spike LCS LCS Limits Units Analysis **Parameter** Flag Result **Amount** Result %Rec Date TPH-GRO (Gasoline Range Organic: 5000 5008 100 75-123 09/09/16 12:44 <100 ug/kg MB MB **LCS** LCS Limits Units **Analysis** Surrogate Flag Result Flag Date %Rec 91 111 50-122 % 09/09/16 12:44 a,a,a-Trifluorotoluene

Analytical Method: SW-846 8015C Prep Method: SW5030 135670 Seq Number: Matrix: Soil Date Prep: 09/09/16

MS

Parent Sample Id: 16090815-014 MS Sample Id: 16090815-014 S MSD Sample Id: 16090815-014 SD

Spike MS MS %RPD **RPD Parent** MSD MSD Limits Units **Analysis** Flag **Parameter** Result Amount Result %Rec Limit Date Result %Rec TPH-GRO (Gasoline Range Organic: <123.6 6181 4919 80 5346 85 31-140 8 30 09/09/16 18:19 ug/kg

MS

MSD

Limits

Units

Analysis MSD Surrogate Result Flag Flag Date Result 09/09/16 18:19 a,a,a-Trifluorotoluene 108 109 50-122 %

SW3550C

PHASE SEPARATION SCIENCE, INC. QC Summary 16090815

Icor Ltd. Robinson Terminal North

Analytical Method: SW-846 8260 B Prep Method: SW5030 Seq Number: Matrix: Solid Date Prep: 09/12/16

LCS Sample Id: 62514-1-BKS MR Sample Id

MB Sample Id:	62514-1-BLK		LCS Sar	nple ld:	62514-1-BKS			
Parameter	ME Resul	•	LCS Result	LCS %Rec	Limits	Units	Analysis Date	Flag
Acetone	<20.0	0 60.00	77.54	129	46-127	ug/kg	09/12/16 13:27	' Н
Benzene	<5.00	0 60.00	59.05	98	70-127	ug/kg	09/12/16 13:27	,
Bromochloromethane	e <5.00	0 60.00	53.57	89	68-122	ug/kg	09/12/16 13:27	,
Bromodichlorometha	ne <5.00	0 60.00	47.82	80	68-122	ug/kg	09/12/16 13:27	,
Bromoform	<5.00	0 60.00	49.46	82	57-127	ug/kg	09/12/16 13:27	•
Bromomethane	<5.00	0 60.00	55.79	93	68-123	ug/kg	09/12/16 13:27	•
2-Butanone (MEK)	<20.0	0 60.00	71.91	120	41-136	ug/kg	09/12/16 13:27	•
Carbon Disulfide	<10.0	0 60.00	61.78	103	66-135	ug/kg	09/12/16 13:27	•
Carbon Tetrachloride	<5.00	0 60.00	45.84	76	64-147	ug/kg	09/12/16 13:27	•
Chlorobenzene	<5.00	0 60.00	54.66	91	70-121	ug/kg	09/12/16 13:27	,
Chloroethane	<5.00	0 60.00	58.01	97	66-142	ug/kg	09/12/16 13:27	,
Chloroform	<5.00	0 60.00	52.12	87	68-123	ug/kg	09/12/16 13:27	,
Chloromethane	<5.00	0 60.00	66.80	111	65-136	ug/kg	09/12/16 13:27	,
Cyclohexane	<20.0	0 60.00	61.71	103	62-138	ug/kg	09/12/16 13:27	•
1,2-Dibromo-3-Chloro	opropane <40.0	0 60.00	50.96	85	55-122	ug/kg	09/12/16 13:27	,
Dibromochlorometha	ne <5.00	0 60.00	49.76	83	61-122	ug/kg	09/12/16 13:27	,
1,2-Dibromoethane (EDB) <5.00	0 60.00	53.10	89	63-119	ug/kg	09/12/16 13:27	•
1,2-Dichlorobenzene	<5.00	0 60.00	54.55	91	65-121	ug/kg	09/12/16 13:27	•
1,3-Dichlorobenzene	<5.00	0 60.00	55.44	92	69-121	ug/kg	09/12/16 13:27	,
1,4-Dichlorobenzene	<5.00	0 60.00	54.42	91	69-118	ug/kg	09/12/16 13:27	,
Dichlorodifluorometha	ane <5.00	0 60.00	49.90	83	53-162	ug/kg	09/12/16 13:27	,
1,1-Dichloroethane	<5.00	0 60.00	58.02	97	70-127	ug/kg	09/12/16 13:27	,
1,2-Dichloroethane	<5.00	0 60.00	49.07	82	68-118	ug/kg	09/12/16 13:27	,
1,1-Dichloroethene	<5.00	0 60.00	58.56	98	69-133	ug/kg	09/12/16 13:27	,
1,2-Dichloropropane	<5.00	0 60.00	55.72	93	70-122	ug/kg	09/12/16 13:27	•
cis-1,2-Dichloroethen	e <5.00	0 60.00	58.46	97	68-126	ug/kg	09/12/16 13:27	•
cis-1,3-Dichloroprope			51.93	87	68-121	ug/kg	09/12/16 13:27	
trans-1,2-Dichloroeth			59.66	99	70-132	ug/kg	09/12/16 13:27	
trans-1,3-Dichloropro			49.26	82	67-115	ug/kg	09/12/16 13:27	
Ethylbenzene	<5.00		54.55	91	70-125	ug/kg	09/12/16 13:27	
2-Hexanone	<20.0		60.80	101	40-121	ug/kg	09/12/16 13:27	
Isopropylbenzene	<5.00		55.70	93	68-130	ug/kg	09/12/16 13:27	
Methyl Acetate	<20.0		68.09	113	60-125	ug/kg	09/12/16 13:27	
Methylcyclohexane	<20.0		53.21	89	62-150	ug/kg	09/12/16 13:27	
Methylene Chloride	<5.00		59.41	99	67-121	ug/kg	09/12/16 13:27	
4-Methyl-2-Pentanon			59.20	99	48-117	ug/kg	09/12/16 13:27	
Methyl-t-butyl ether	<5.00		54.78	91	66-119	ug/kg 	09/12/16 13:27	
Naphthalene	<5.00		53.27	89	54-115	ug/kg	09/12/16 13:27	
Styrene	<5.00		52.80	88	71-120	ug/kg	09/12/16 13:27	
1,1,2,2-Tetrachloroet			59.63	99	59-122	ug/kg	09/12/16 13:27	
Tetrachloroethene	<5.00		48.55	81	65-145	ug/kg	09/12/16 13:27	
Toluene	<5.00		52.04	87	69-129	ug/kg	09/12/16 13:27	
1,2,3-Trichlorobenzer			48.62	81	60-114	ug/kg	09/12/16 13:27	
1,2,4-Trichlorobenzer			49.37	82	64-115	ug/kg	09/12/16 13:27	
1,1,1-Trichloroethane			47.79	80	65-139	ug/kg	09/12/16 13:27	
1,1,2-Trichloroethane			55.62	93	64-125	ug/kg	09/12/16 13:27	
Trichloroethene	<5.00		50.31	84	69-133	ug/kg	09/12/16 13:27	
Trichlorofluoromethar			47.54	79	59-153	ug/kg	09/12/16 13:27	
1,1,2-Trichloro-1,2,2-Trif			49.70	83	62-139	ug/kg	09/12/16 13:27	
Vinyl Chloride	<5.00		70.46	117	69-142	ug/kg	09/12/16 13:27	
m,p-Xylenes	<10.0	0 120	108.6	91	71-124	ug/kg	09/12/16 13:27	

QC Summary 16090815

Icor Ltd. Robinson Terminal North

Analytical Method: SW-846 8260 B Prep Method: SW5030 Seq Number: 135708 Matrix: Solid Date Prep: 09/12/16

LCS Sample Id: 62514-1-BKS MB Sample Id: 62514-1-BLK

MB cample la. 020	DLIX									
Parameter	MB Result	Spike Amount	LCS Result	LCS %Red		Limits		Units	Analysis F Date	lag
o-Xylene	<5.000	60.00	52.79	8	3	72-123		ug/kg	09/12/16 13:27	
Surrogate	MB %Rec	MB Flag		.CS esult	LCS Flag		Limits	Units	Analysis Date	
4-Bromofluorobenzene	109		9	97			82-126	%	09/12/16 13:27	
Dibromofluoromethane	99		1	02			92-113	%	09/12/16 13:27	
Toluene-D8	98		1	00			94-105	%	09/12/16 13:27	

F = RPD exceeded the laboratory control limits

X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits

L = Recovery of BS,BSD or both below the laboratory control limits



SAMPLE CHAIN OF CUSTODY/AGREEMENT FORM

www.phaseonline.com

email: info@phaseonline.com

PHASE SEPARATION SCIENCE, INC.

M, 3 R V 2 26C1 *PHONE NO.: (703 608-5469, 8 Mainto Codes. 749. 240. 240. 400. (70 0.0.) 740. 240. 240. 400. (70 0.0.) 740. 250. N. UNION ST, P.O. NO.: 750. 501 N. UNION ST, P.O. NO.: 750. 502 N. COMPLED. 750. 503	CLIEINI. /COZ, C. O. DIFILO	*OFFICE LOC.		LOS MOIN CHARLE	16070815	PAGE / OF C
## PROJECT NO. () O SAMPLE House O SAMPLE D	ROJECT MGR: M, SRUZ ZEC/ *PHON	30. (70)	608-5969	Matrix Codes: SW=Surface Wir	Wtr GW=Ground W	oil S=Soil L=Liquid SOL=Soild A=Air WI=Wipe
202w Lov (は異かいの Volatific Tools)	AIL: LANDS THAT BADL, LONG FAX NO	~	_	၌ ပ (Need O Seed O Se	
7. 28.0 501 N. UNION ST., PO.NO.: 1. 38.0 2501 N. UNION ST., PO.NO.: 1. 38.0 2501 N. UNION ST., PO.NO.: 2 (8.15 7 (1-2) 97 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	POJECT NAME: ROLMION TERMINAL	NON-SPROJ	ECT NO :		209	2.80
AMPLE IDENTIFICATION (SAMPLED) (SAMP	ELOCATION: 500/501 N. UNION S	T P.O.N	0.:		31/21/29/08/08/08/08/08/08/08/08/08/08/08/08/08/	8 8 8
2 - C & 1 / 5 / 4 / 5 / 5	APLER(S): M. 3RUZEES/	DW CERT N	0:		17/0/17/00	725
2-(215(1-2)) 9/316 60 1 6 × 1	*SAMPLE IDENTIFICATION	_	-	αø	8/30/5/P/A/A/A/A/A/	*
2-583(00,5-40) 0830 6w 1 X 2-583(00,5-11,7) 0825 60 1 X 2-583(00,5-11,7) 1250 50 1 X 22-12(1-2) 1250 50 1 X 22-12(1-2) 1250 50 1 X 22-12(1-2) 1250 50 1 X 22-13-13-13-13-13-13-13-13-13-13-13-13-13-		7/4	١.	/		×
7-5B3(10.5-11.5) 0825 60 1 × × 1 252 50 1 × 2 252 50 1 × 2 252 50 1 × 2 252 50 1 × 2 252 50 1 × 2 252 60 1 × 2 253 50 1 × 2 254 6 1-2 × 2 250 60 3 × 3 250 60 3 × 3 250 60 3 × 3 250 60 3 × 3 250 60 3 × 3 250 60 3 × 3 250 60 1		_		1 /	\frac{1}{\chi}	
1250 1005			1	/ /	×	×
7250 50 1	+ MHAt-05-(1-2)			1	×	
4,26-18 (1-2) 1305 50 1 150 10 1 151			20	/	λ	
756-17-17-25 1305-60 1	M. Hpt-18 (1-2)			/	<u>У</u>	
1310	M. Hat -17 (1-2)		1	- /	X	
#\$\$\frac{4}{7}\tau_{-1}\triangle \frac{1}{1}\triangle \frac{1}{1}\triang				1	x	
1	M. Hpt - 19	_		3	x	x
TTE Date Time Received By: **Requested TAT (One	M. Hat -19	>	+	/ /	オ	
Date Time Received By COA QC SUMM COA QC S	D	Time O 70	F			# of Goolers: 2 Custody Seal: 465
Date Time Becaused Bu-	TTE Oate	Time 700	Received By	.{	Deliverables Required: QC SUMM CLP LIKE	Shipping Carrier: 725
A KO DANADAU DINI		Time	Received By		Special Instructions:	
Relinquished By: (4) Date Time Received By: DW COMPLIANCE? EDD FORM	100	Time	Received By:		DW COMPLIANCE? EDD FORMAT TYPE	STATE RESULTS REPORTED TO:

6630 Baltimore National Pike • Route 40 West • Baltimore, Maryland 21228 • (410) 747-8770 • (800) 932-9047 • Fax (410) 788-8723

The client (Client Name), by signing, or having client's agent sign, this "Sample Chain of Custody/Agreement Form", agrees to pay for the above requested services per the latest version of the Service Brochure or PSS-provided quotation including any and all attorney's or other reasonable fees if collection becomes necessary. * = REQUIRED



SAMPLE CHAIN OF CUSTODY/AGREEMENT FORM

www.phaseonline.com email: info@phaseonline.com

PHASE SEPARATION SCIENCE, INC.

STATE RESULTS REPORTED TO: DE PA VA WV OTHER ov ov SW=Surface Wit DW=Drinking Wit GW=Ground Wir WW=Waste Wir D=Oil S=Soil L=Liquid SOL=Solid A=Air WI=Wipe REMARKS Lemp: 0 OF N Custody Seal: A&S loe Present PUE Shipping Carrier. PAGE **∆**□ of Coolers: 7 €□ X DW COMPLIANCE? EDD FORMAT TYPE X Requested TAT (One TAT per COC)
-Day 3-Day 2-Day OTHER x Data Deliverables Required: COA QC SUMM CLP LIKE Special Instructions: 5-Day Next Day X YES Analysis/ PSS Work Order #: SAMPLE COMP GRAB TYPE 9 0 Z M C O MATRIX 5 0 3 20 0 *PROJECT MGR: M, R RUPECLI *PHONE NO. (7-3, 608-5769 Received By: Received By: Received By: Received By 0251 *TIME (SAMPLED) 1515 1355 1400 1450 *PROJECT NAME: ROLMSON TEMMA NOTHOLICET NO. 1510 1441 SITE LOCATION: 550/501 N. WILL SPO.NO. DW CERT NO.: *DATE (SAMPLED) 040 300 lime *OFFICE LOC. Time Time Time EMAIL: LONXIL 4 DAG, CONFAX NO. M. Hat - 13 (4-5 Els- 1 187 (42 1002-5814 (45) 00 2-1) Date *SAMPLE IDENTIFICATION 2-1) 4185-2001 Ces-37 (5-6) 9 SAMPLER(S): U. RENZEEL 1 Gara P82-9001 M. 1426-13 *CLIENT: 1002, CTD Relinquished By: (2) Relinquished By: (3) Relinquished By: (4) iquished By: LAB NO. a 2

The client (Client Name), by signing, or having client's agent sign, this "Sample Chain of Custody/Agreement Form", agrees to pay for the above requested services per the latest version of the Service Brochure or PSS-provided quotation including any and all attorney's or other reasonable fees if collection becomes necessary. *= REQUIRED Fax (410) 788-87 747-8770 • (800) 932-9047 6630 Baltimore National Pike · Route 40 West · Baltimore, Maryland 21228 ·



Phase Separation Science, Inc

Sample Receipt Checklist

Work Order # 16090815 Rachel Davis **Received By**

Date Received 09/08/2016 01:00:00 PM Icor Ltd. **Client Name**

Project Name Robinson Terminal North **Delivered By** Trans Time Express

Not Applicable **Disposal Date** 10/13/2016 **Tracking No**

> Logged In By Rachel Davis

Shipping Container(s)

No. of Coolers

		Ice	Present
Custody Seal(s) Intact?	N/A	Temp (deg C)	8
Seal(s) Signed / Dated?	N/A	Temp Blank Present	No

Ice Present

Custody Seal(s) Intact? Temp (deg C) N/A 9 Temp Blank Present No Seal(s) Signed / Dated? N/A

Documentation

Sampler Name Mike Bruzzesi COC agrees with sample labels? Yes MD DW Cert. No. N/A Yes

Chain of Custody

Sample Container Custody Seal(s) Intact? Not Applicable Appropriate for Specified Analysis? Yes Seal(s) Signed / Dated Not Applicable

Intact? Yes

Labeled and Labels Legible? Yes

Total No. of Samples Received 17 Total No. of Containers Received 24

Preservation

(pH<2)	N/A
(pH<2)	N/A
	N/A
(pH>12)	N/A
(pH>9)	N/A
(pH<2)	N/A
(pH<2)	N/A
(pH<2)	N/A
	N/A
	N/A
(pH<2)	N/A
	(pH<2) (pH>12) (pH>9) (pH<2) (pH<2) (pH<2)



Phase Separation Science, Inc

Sample Receipt Checklist

Work Order # 16090815 Received By Rachel Davis

Client Name Icor Ltd. Date Received 09/08/2016 01:00:00 PM

Project Name Robinson Terminal North Delivered By Trans Time Express

Disposal Date 10/13/2016 Tracking No Not Applicable

Logged In By Rachel Davis

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Sample(s) received at a temperature greater than 6 degrees C and ice was present.

Samples Inspected/Checklist Completed By:	Lachel Davis	Date: 09/08/2016
PM Review and Approval:	Simon Crisp	Date: 09/12/2016

Analytical Report for

Icor Ltd.

Certificate of Analysis No.: 16090912

Project Manager: Mike Bruzzesi

Project Name: Robinson Terminal North Project Location: 500/501 N. Union St.



September 22, 2016
Phase Separation Science, Inc.
6630 Baltimore National Pike
Baltimore, MD 21228
Phone: (410) 747-8770

Fax: (410) 788-8723

PHASE SEPARATION SCIENCE, INC.



September 22, 2016

Mike Bruzzesi Icor Ltd. PO Box 406 Middleburg, VA 20118

Reference: PSS Work Order(s) No: 16090912

Project Name: Robinson Terminal North Project Location: 500/501 N. Union St.

Dear Mike Bruzzesi:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Work Order(s) numbered **16090912**. This report version includes revised sample results to add Dioxins results. This report cancels and supersedes report version 1.000 dated September 16, 2016.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on October 14, 2016, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

Dan PrucnalLaboratory Manager



Sample Summary

Client Name: Icor Ltd.

Project Name: Robinson Terminal North

Work Order Number(s): 16090912

The following samples were received under chain of custody by Phase Separation Science (PSS) on 09/09/2016 at 01:10 pm

Lab Sample Id	Sample Id	Matrix	Date/Time Collected
16090912-001	M1Hpt-08-GW (36.5-40)	GROUND WATER	09/08/16 07:45
16090912-002	M1Hpt-10-GW (25-28.5)	GROUND WATER	09/08/16 08:00
16090912-003	M1Hpt-14-GW (25-28.5)	GROUND WATER	09/08/16 11:15
16090912-004	M1Hpt-16 (1-2)	SOIL	09/08/16 08:00
16090912-005	M1Hpt-16 (4-5)	SOIL	09/08/16 08:05
16090912-006	M1Hpt-16 (8-9)	SOIL	09/08/16 08:10
16090912-007	M1Hpt-15 (1-2)	SOIL	09/08/16 08:30
16090912-008	M1Hpt-15 (4-5)	SOIL	09/08/16 08:35
16090912-009	M1Hpt-14 (1-2)	SOIL	09/08/16 09:35
16090912-010	M1Hpt-14 (4-5)	SOIL	09/08/16 09:40
16090912-011	M1Hpt-14 (5-6)	SOIL	09/08/16 09:45
16090912-012	M1Hpt-14 (25-26)	SOIL	09/08/16 10:10
16090912-013	M1Hpt-20 (1.5-2.5)	SOIL	09/08/16 13:30
16090912-014	M1Hpt-20 (4-5)	SOIL	09/08/16 13:35

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

- 1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
- 2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
- 3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
- 4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminates, and part 141.3, for the secondary drinking water contaminates.
- 5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
- 6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
- 7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
- 8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

- B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- C Results Pending Final Confirmation.
- E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- Fail The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
- The target analyte was positively identified below the reporting limit but greater than the MDL.
- MDL This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is an estimate of the minimum amount of a substance that an analytical process can reliably detect. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific.
- ND Not Detected at or above the reporting limit.
- RL PSS Reporting Limit.
- U Not detected.



Sample Summary

Client Name: Icor Ltd.

Project Name: Robinson Terminal North

Work Order Number(s): 16090912

Certifications:

NELAP Certifications: PA 68-03330, VA 460156 State Certifications: MD 179, WV 303

Regulated Soil Permit: P330-12-00268 NSWC USCG Accepted Laboratory LDBE MWAA LD1997-0041-2015

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090912

Icor Ltd., Middleburg, VA

September 22, 2016

Sample ID: M1Hpt-08-GW (36.5-4	•		Sampled:			PSS Sample	e ID: 1609091	2-001
Matrix: GROUND WATER		Date/Time	Received: (09/09/2	016 13:10			
Oil and Grease	Analytica	l Method: E	PA 1664 A					
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Oil & Grease, Total Recovered	ND	mg/L	2.2		1	09/15/16	09/15/16 13:1	4 1022
Total Petroleum Hydrocarbons	Analytica	l Method: E	PA 1664 A					
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH	ND	mg/L	2.2		1	09/15/16	09/15/16 12:5	9 1022

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090912

Icor Ltd., Middleburg, VA

September 22, 2016

Sample ID: M1Hpt-10-GW (25-28.5) Matrix: GROUND WATER			e Sampled: 09 e Received: ⁰⁹		·	e ID: 16090912-002
Total Petroleum Hydrocarbons - DRO	Analytica	l Method: \$	SW-846 8015 C		Preparation Meth	nod: 3510C
	Result	Units	RL FI	ag Dil	Prepared	Analyzed Analyst
TPH-DRO (Diesel Range Organics)	0.55	mg/L	0.11	1	09/13/16	09/15/16 12:50 1045
Total Petroleum Hydrocarbons-GRO	Analytica	l Method: S	SW-846 8015C		Preparation Meth	nod: 5030B
	Result	Units	RL FI	ag Dil	Prepared	Analyzed Analyst
TPH-GRO (Gasoline Range Organics)	ND	ug/L	100	1	09/15/16	09/15/16 12:28 1035

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090912

Icor Ltd., Middleburg, VA

September 22, 2016

Project Name: Robinson Terminal North Project Location: 500/501 N. Union St.

Sample ID: M1Hpt-10-GW (25-28.5)

Ethylbenzene

		,	p				
Matrix: GROUND WATER	[Date/Time	e Received:	09/09/2016 13:	10		
TCL Volatile Organic Compounds	Analytica	l Method:	SW-846 8260	В	Preparation Metl	nod: 5030B	
	Result	Units	RL	Flag Dil	Prepared	Analyzed	Analyst
Acetone	38	ug/L	10	1	09/13/16	09/13/16 22:32	2 1011
Benzene	1.3	ug/L	1.0	1	09/13/16	09/13/16 22:32	2 1011
Bromochloromethane	ND	ug/L	1.0	1	09/13/16	09/13/16 22:32	2 1011
Bromodichloromethane	ND	ug/L	1.0	1	09/13/16	09/13/16 22:32	2 1011
Bromoform	ND	ug/L	5.0	1	09/13/16	09/13/16 22:32	2 1011
Bromomethane	ND	ug/L	1.0	1	09/13/16	09/13/16 22:32	2 1011
2-Butanone (MEK)	ND	ug/L	10	1	09/13/16	09/13/16 22:32	2 1011
Carbon Disulfide	ND	ug/L	10	1	09/13/16	09/13/16 22:32	2 1011
Carbon Tetrachloride	ND	ug/L	1.0	1	09/13/16	09/13/16 22:32	2 1011
Chlorobenzene	ND	ug/L	1.0	1	09/13/16	09/13/16 22:32	2 1011
Chloroethane	ND	ug/L	1.0	1	09/13/16	09/13/16 22:32	2 1011
Chloroform	ND	ug/L	1.0	1	09/13/16	09/13/16 22:32	2 1011
Chloromethane	ND	ug/L	1.0	1	09/13/16	09/13/16 22:32	2 1011
Cyclohexane	ND	ug/L	10	1	09/13/16	09/13/16 22:32	2 1011
1,2-Dibromo-3-Chloropropane	ND	ug/L	10	1	09/13/16	09/13/16 22:32	2 1011
Dibromochloromethane	ND	ug/L	1.0	1	09/13/16	09/13/16 22:32	2 1011
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1	09/13/16	09/13/16 22:32	2 1011
1,2-Dichlorobenzene	ND	ug/L	1.0	1	09/13/16	09/13/16 22:32	2 1011
1,3-Dichlorobenzene	ND	ug/L	1.0	1	09/13/16	09/13/16 22:32	2 1011
1,4-Dichlorobenzene	ND	ug/L	1.0	1	09/13/16	09/13/16 22:32	2 1011
Dichlorodifluoromethane	ND	ug/L	1.0	1	09/13/16	09/13/16 22:32	2 1011
1,1-Dichloroethane	ND	ug/L	1.0	1	09/13/16	09/13/16 22:32	2 1011
1,2-Dichloroethane	ND	ug/L	1.0	1	09/13/16	09/13/16 22:32	2 1011
cis-1,2-Dichloroethene	ND	ug/L	1.0	1	09/13/16	09/13/16 22:32	2 1011
1,1-Dichloroethene	ND	ug/L	1.0	1	09/13/16	09/13/16 22:32	2 1011
1,2-Dichloropropane	ND	ug/L	1.0	1	09/13/16	09/13/16 22:32	2 1011
cis-1,3-Dichloropropene	ND	ug/L	1.0	1	09/13/16	09/13/16 22:32	2 1011
trans-1,3-Dichloropropene	ND	ug/L	1.0	1	09/13/16	09/13/16 22:32	2 1011
trans-1,2-Dichloroethene	ND	ug/L	1.0	1	09/13/16	09/13/16 22:32	2 1011

1.0

ND

ug/L

09/13/16 09/13/16 22:32 1011

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090912

Icor Ltd., Middleburg, VA

September 22, 2016

Sample ID: M1Hpt-10-GW (25-28.5)	Date/Time Sampled: 09/08/201	6 08:00 PSS Sample ID: 16090912-002
Matrix: GROUND WATER	Date/Time Received: 09/09/201	6 13:10
TCL Volatile Organic Compounds	Analytical Method: SW-846 8260 B	Preparation Method: 5030B

TCL Volatile Organic Compounds	Analytica	i ivietriou. S	VV-040 0200 D		Preparation Meti	100. 5030B	
	Result	Units	RL FI	ag Dil	Prepared	Analyzed	Analyst
2-Hexanone	ND	ug/L	10	1	09/13/16	09/13/16 22:32	2 1011
Isopropylbenzene	ND	ug/L	1.0	1	09/13/16	09/13/16 22:32	2 1011
Methyl Acetate	ND	ug/L	10	1	09/13/16	09/13/16 22:32	2 1011
Methylcyclohexane	ND	ug/L	10	1	09/13/16	09/13/16 22:32	2 1011
Methylene Chloride	ND	ug/L	1.0	1	09/13/16	09/13/16 22:32	2 1011
4-Methyl-2-Pentanone	ND	ug/L	5.0	1	09/13/16	09/13/16 22:32	2 1011
Methyl-t-butyl ether	ND	ug/L	1.0	1	09/13/16	09/13/16 22:32	2 1011
Naphthalene	7.5	ug/L	1.0	1	09/13/16	09/13/16 22:32	2 1011
Styrene	ND	ug/L	1.0	1	09/13/16	09/13/16 22:32	2 1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1	09/13/16	09/13/16 22:32	2 1011
Tetrachloroethene	ND	ug/L	1.0	1	09/13/16	09/13/16 22:32	2 1011
Toluene	ND	ug/L	1.0	1	09/13/16	09/13/16 22:32	2 1011
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1	09/13/16	09/13/16 22:32	2 1011
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1	09/13/16	09/13/16 22:32	2 1011
1,1,1-Trichloroethane	ND	ug/L	1.0	1	09/13/16	09/13/16 22:32	2 1011
Trichloroethene	ND	ug/L	1.0	1	09/13/16	09/13/16 22:32	2 1011
1,1,2-Trichloroethane	ND	ug/L	1.0	1	09/13/16	09/13/16 22:32	2 1011
Trichlorofluoromethane	ND	ug/L	5.0	1	09/13/16	09/13/16 22:32	2 1011
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	ug/L	1.0	1	09/13/16	09/13/16 22:32	2 1011
Vinyl Chloride	ND	ug/L	1.0	1	09/13/16	09/13/16 22:32	2 1011
m,p-Xylenes	ND	ug/L	2.0	1	09/13/16	09/13/16 22:32	2 1011
o-Xylene	ND	ug/L	1.0	1	09/13/16	09/13/16 22:32	2 1011

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090912

Icor Ltd., Middleburg, VA

September 22, 2016

Sample ID: M1Hpt-14-GW (25-28.5 Matrix: GROUND WATER	•	Date/Time Date/Time I	-			• • • • • • • • • • • • • • • • • • •	e ID: 160909 ²	12-003
				03/03/	2010 13.10			
Oil and Grease	Analytica	l Method: EF	A 1664 A					
<u> </u>	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Oil & Grease, Total Recovered	ND	mg/L	2.4		1	09/15/16	09/15/16 13:1	4 1022
Total Petroleum Hydrocarbons	Analytica	l Method: EF	PA 1664 A					
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH	ND	mg/L	2.4		1	09/15/16	09/15/16 12:5	59 1022
Total Petroleum Hydrocarbons - DRO	Analytica	l Method: SV	V-846 8015	С		Preparation Metl	nod: 3510C	
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-DRO (Diesel Range Organics)	ND	mg/L	0.10		1	09/13/16	09/15/16 13:1	5 1045
Total Petroleum Hydrocarbons-GRO	Analytica	l Method: SV	V-846 8015	С		Preparation MetI	nod: 5030B	
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-GRO (Gasoline Range Organics)	ND	ug/L	100		1	09/15/16	09/15/16 12:5	4 1035

PHASE SEPARATION SCIENCE, INC.



Preparation Method: 5030B

CERTIFICATE OF ANALYSIS

No: 16090912

Icor Ltd., Middleburg, VA

September 22, 2016

Analytical Method: SW-846 8260 B

Project Name: Robinson Terminal North Project Location: 500/501 N. Union St.

TCL Volatile Organic Compounds

Sample ID: M1Hpt-14-GW (25-28.5)	Date/Time Sampled: 09/08/2016 11:15	PSS Sample ID: 16090912-003
Matrix: GROUND WATER	Date/Time Received: 09/09/2016 13:10	

TOE VOIALINE Organic Compounds	Analytica	i Metriou. S	VV-040 0200 D	Freparation Method: 5050B			
_	Result	Units	RL Flag	Dil	Prepared	Analyzed	Analyst
Acetone	ND	ug/L	10	1	09/13/16	09/13/16 22:53	1011
Benzene	ND	ug/L	1.0	1	09/13/16	09/13/16 22:53	1011
Bromochloromethane	ND	ug/L	1.0	1	09/13/16	09/13/16 22:53	1011
Bromodichloromethane	ND	ug/L	1.0	1	09/13/16	09/13/16 22:53	1011
Bromoform	ND	ug/L	5.0	1	09/13/16	09/13/16 22:53	1011
Bromomethane	ND	ug/L	1.0	1	09/13/16	09/13/16 22:53	1011
2-Butanone (MEK)	ND	ug/L	10	1	09/13/16	09/13/16 22:53	1011
Carbon Disulfide	ND	ug/L	10	1	09/13/16	09/13/16 22:53	1011
Carbon Tetrachloride	ND	ug/L	1.0	1	09/13/16	09/13/16 22:53	1011
Chlorobenzene	ND	ug/L	1.0	1	09/13/16	09/13/16 22:53	1011
Chloroethane	ND	ug/L	1.0	1	09/13/16	09/13/16 22:53	1011
Chloroform	ND	ug/L	1.0	1	09/13/16	09/13/16 22:53	1011
Chloromethane	ND	ug/L	1.0	1	09/13/16	09/13/16 22:53	1011
Cyclohexane	ND	ug/L	10	1	09/13/16	09/13/16 22:53	1011
1,2-Dibromo-3-Chloropropane	ND	ug/L	10	1	09/13/16	09/13/16 22:53	1011
Dibromochloromethane	ND	ug/L	1.0	1	09/13/16	09/13/16 22:53	1011
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1	09/13/16	09/13/16 22:53	1011
1,2-Dichlorobenzene	ND	ug/L	1.0	1	09/13/16	09/13/16 22:53	1011
1,3-Dichlorobenzene	ND	ug/L	1.0	1	09/13/16	09/13/16 22:53	1011
1,4-Dichlorobenzene	ND	ug/L	1.0	1	09/13/16	09/13/16 22:53	1011
Dichlorodifluoromethane	ND	ug/L	1.0	1	09/13/16	09/13/16 22:53	1011
1,1-Dichloroethane	ND	ug/L	1.0	1	09/13/16	09/13/16 22:53	1011
1,2-Dichloroethane	ND	ug/L	1.0	1	09/13/16	09/13/16 22:53	1011
cis-1,2-Dichloroethene	ND	ug/L	1.0	1	09/13/16	09/13/16 22:53	1011
1,1-Dichloroethene	ND	ug/L	1.0	1	09/13/16	09/13/16 22:53	1011
1,2-Dichloropropane	ND	ug/L	1.0	1	09/13/16	09/13/16 22:53	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0	1	09/13/16	09/13/16 22:53	1011
trans-1,3-Dichloropropene	ND	ug/L	1.0	1	09/13/16	09/13/16 22:53	1011
trans-1,2-Dichloroethene	ND	ug/L	1.0	1	09/13/16	09/13/16 22:53	1011
Ethylbenzene	ND	ug/L	1.0	1	09/13/16	09/13/16 22:53	1011

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090912

Icor Ltd., Middleburg, VA

September 22, 2016

Sample ID: M1Hpt-14-GW (25-28.5)	Date/Time Sampled: 09/08/20	016 11:15 PSS Sample ID: 16090912-003
Matrix: GROUND WATER	Date/Time Received: 09/09/20	016 13:10
TCL Volatile Organic Compounds	Analytical Method: SW-846 8260 B	Preparation Method: 5030B
		B II

TOE Volatile Organic Compounds	Allalytica	i Metriou.	3W-040 0200 B		Freparation Method: 3030B				
	Result	Units	RL F	lag Dil	Prepared	Analyzed	Analyst		
2-Hexanone	ND	ug/L	10	1	09/13/16	09/13/16 22:53	3 1011		
Isopropylbenzene	ND	ug/L	1.0	1	09/13/16	09/13/16 22:53	3 1011		
Methyl Acetate	ND	ug/L	10	1	09/13/16	09/13/16 22:53	3 1011		
Methylcyclohexane	ND	ug/L	10	1	09/13/16	09/13/16 22:53	3 1011		
Methylene Chloride	ND	ug/L	1.0	1	09/13/16	09/13/16 22:53	3 1011		
4-Methyl-2-Pentanone	ND	ug/L	5.0	1	09/13/16	09/13/16 22:53	3 1011		
Methyl-t-butyl ether	5.7	ug/L	1.0	1	09/13/16	09/13/16 22:53	3 1011		
Naphthalene	ND	ug/L	1.0	1	09/13/16	09/13/16 22:53	3 1011		
Styrene	ND	ug/L	1.0	1	09/13/16	09/13/16 22:53	3 1011		
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1	09/13/16	09/13/16 22:53	3 1011		
Tetrachloroethene	ND	ug/L	1.0	1	09/13/16	09/13/16 22:53	3 1011		
Toluene	ND	ug/L	1.0	1	09/13/16	09/13/16 22:53	3 1011		
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1	09/13/16	09/13/16 22:53	3 1011		
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1	09/13/16	09/13/16 22:53	3 1011		
1,1,1-Trichloroethane	ND	ug/L	1.0	1	09/13/16	09/13/16 22:53	3 1011		
1,1,2-Trichloroethane	ND	ug/L	1.0	1	09/13/16	09/13/16 22:53	3 1011		
Trichloroethene	ND	ug/L	1.0	1	09/13/16	09/13/16 22:53	3 1011		
Trichlorofluoromethane	ND	ug/L	5.0	1	09/13/16	09/13/16 22:53	3 1011		
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	ug/L	1.0	1	09/13/16	09/13/16 22:53	3 1011		
Vinyl Chloride	ND	ug/L	1.0	1	09/13/16	09/13/16 22:53	3 1011		
m,p-Xylenes	ND	ug/L	2.0	1	09/13/16	09/13/16 22:53	3 1011		
o-Xylene	ND	ug/L	1.0	1	09/13/16	09/13/16 22:53	3 1011		

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090912

Icor Ltd., Middleburg, VA

September 22, 2016

Sample ID: M1Hpt-14-GW (25-28.5) Matrix: GROUND WATER			e Sampled: e Received:			•	e ID: 16090912	2-003
TCL Semivolatile Organic Compounds			SW-846 8270			Preparation Metl	nod: 3510C	
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acenaphthene	ND	ug/L	5.0		1	09/13/16	09/14/16 06:20	1055
Acenaphthylene	ND	ug/L	5.0		1	09/13/16	09/14/16 06:20	1055
Acetophenone	ND	ug/L	5.0		1	09/13/16	09/14/16 06:20	1055
Anthracene	ND	ug/L	5.0		1	09/13/16	09/14/16 06:20	1055
Atrazine	ND	ug/L	5.0		1	09/13/16	09/14/16 06:20	1055
Benzo(a)anthracene	ND	ug/L	5.0		1	09/13/16	09/14/16 06:20	1055
Benzo(a)pyrene	ND	ug/L	5.0		1	09/13/16	09/14/16 06:20	1055
Benzo(b)fluoranthene	ND	ug/L	5.0		1	09/13/16	09/14/16 06:20	1055
Benzo(g,h,i)perylene	ND	ug/L	5.0		1	09/13/16	09/14/16 06:20	1055
Benzo(k)fluoranthene	ND	ug/L	5.0		1	09/13/16	09/14/16 06:20	1055
Biphenyl (Diphenyl)	ND	ug/L	5.0		1	09/13/16	09/14/16 06:20	1055
Butyl benzyl phthalate	ND	ug/L	5.0		1	09/13/16	09/14/16 06:20	1055
bis(2-chloroethoxy) methane	ND	ug/L	5.0		1	09/13/16	09/14/16 06:20	1055
bis(2-chloroethyl) ether	ND	ug/L	5.0		1	09/13/16	09/14/16 06:20	1055
bis(2-chloroisopropyl) ether	ND	ug/L	5.0		1	09/13/16	09/14/16 06:20	1055
bis(2-ethylhexyl) phthalate	ND	ug/L	5.0		1	09/13/16	09/14/16 06:20	1055
4-Bromophenylphenyl ether	ND	ug/L	5.0		1	09/13/16	09/14/16 06:20	1055
Di-n-butyl phthalate	ND	ug/L	5.0		1	09/13/16	09/14/16 06:20	1055
Carbazole	ND	ug/L	5.0		1	09/13/16	09/14/16 06:20	1055
Caprolactam	ND	ug/L	5.0		1	09/13/16	09/14/16 06:20	1055
4-Chloro-3-methyl phenol	ND	ug/L	5.0		1	09/13/16	09/14/16 06:20	1055
4-Chloroaniline	ND	ug/L	5.0		1	09/13/16	09/14/16 06:20	1055
2-Chloronaphthalene	ND	ug/L	5.0		1	09/13/16	09/14/16 06:20	1055
2-Chlorophenol	ND	ug/L	5.0		1	09/13/16	09/14/16 06:20	1055
4-Chlorophenyl Phenyl ether	ND	ug/L	5.0		1	09/13/16	09/14/16 06:20	1055
Chrysene	ND	ug/L	5.0		1	09/13/16	09/14/16 06:20	1055
Dibenz(a,h)Anthracene	ND	ug/L	5.0		1	09/13/16	09/14/16 06:20	1055
Dibenzofuran	ND	ug/L	5.0		1	09/13/16	09/14/16 06:20	1055
3,3-Dichlorobenzidine	ND	ug/L	5.0		1	09/13/16	09/14/16 06:20	1055
2,4-Dichlorophenol	ND	ug/L	5.0		1	09/13/16	09/14/16 06:20	1055

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090912

Icor Ltd., Middleburg, VA

September 22, 2016

Sample ID: M1Hpt-14-GW (25-28.5) Matrix: GROUND WATER		Date/Time Sampled: 09/08/2 Date/Time Received: 09/09/2			•			16090912-003	
TCL Semivolatile Organic Compounds			W-846 8270			Preparation Meth	nod: 3510C		
	Result	Units	RL	Flag D	il	Prepared	Analyzed	Analyst	
Diethyl phthalate	ND	ug/L	5.0		1	09/13/16	09/14/16 06:20		
Dimethyl phthalate	ND	ug/L	5.0		1	09/13/16	09/14/16 06:20	1055	
2,4-Dimethylphenol	ND	ug/L	5.0		1	09/13/16	09/14/16 06:20	1055	
4,6-Dinitro-2-methyl phenol	ND	ug/L	5.0		1	09/13/16	09/14/16 06:20	1055	
2,4-Dinitrophenol	ND	ug/L	10		1	09/13/16	09/14/16 06:20	1055	
2,4-Dinitrotoluene	ND	ug/L	5.0		1	09/13/16	09/14/16 06:20	1055	
2,6-Dinitrotoluene	ND	ug/L	5.0		1	09/13/16	09/14/16 06:20	1055	
Fluoranthene	ND	ug/L	5.0		1	09/13/16	09/14/16 06:20	1055	
Fluorene	ND	ug/L	5.0		1	09/13/16	09/14/16 06:20	1055	
Hexachlorobenzene	ND	ug/L	5.0		1	09/13/16	09/14/16 06:20	1055	
Hexachlorobutadiene	ND	ug/L	5.0		1	09/13/16	09/14/16 06:20	1055	
Hexachlorocyclopentadiene	ND	ug/L	5.0		1	09/13/16	09/14/16 06:20	1055	
Hexachloroethane	ND	ug/L	5.0		1	09/13/16	09/14/16 06:20	1055	
Indeno(1,2,3-c,d)Pyrene	ND	ug/L	5.0		1	09/13/16	09/14/16 06:20	1055	
Isophorone	ND	ug/L	5.0		1	09/13/16	09/14/16 06:20	1055	
2-Methylnaphthalene	ND	ug/L	5.0		1	09/13/16	09/14/16 06:20	1055	
2-Methyl phenol	ND	ug/L	5.0		1	09/13/16	09/14/16 06:20	1055	
3&4-Methylphenol	ND	ug/L	5.0		1	09/13/16	09/14/16 06:20	1055	
Naphthalene	ND	ug/L	5.0		1	09/13/16	09/14/16 06:20	1055	
2-Nitroaniline	ND	ug/L	5.0		1	09/13/16	09/14/16 06:20	1055	
3-Nitroaniline	ND	ug/L	5.0		1	09/13/16	09/14/16 06:20	1055	
4-Nitroaniline	ND	ug/L	5.0		1	09/13/16	09/14/16 06:20	1055	
Nitrobenzene	ND	ug/L	5.0		1	09/13/16	09/14/16 06:20	1055	
2-Nitrophenol	ND	ug/L	5.0		1	09/13/16	09/14/16 06:20	1055	
4-Nitrophenol	ND	ug/L	5.0		1	09/13/16	09/14/16 06:20	1055	
N-Nitrosodi-n-propyl amine	ND	ug/L	5.0		1	09/13/16	09/14/16 06:20	1055	
N-Nitrosodiphenylamine	ND	ug/L	5.0		1	09/13/16	09/14/16 06:20	1055	
Di-n-octyl phthalate	ND	ug/L	5.0		1	09/13/16	09/14/16 06:20	1055	
Pentachlorophenol	ND	ug/L	5.0		1	09/13/16	09/14/16 06:20	1055	
Phenanthrene	ND	ug/L	5.0		1	09/13/16	09/14/16 06:20	1055	

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090912

Icor Ltd., Middleburg, VA

September 22, 2016

Sample ID: M1Hpt-14-GW (25-28.5 Matrix: GROUND WATER			Sampled: 09/08 Received: 09/09		•	e ID: 1609091	2-003	
TCL Semivolatile Organic Compounds	Analytica	l Method: S	SW-846 8270 C	Preparation Meth	reparation Method: 3510C			
	Result	Units	RL Flag	Dil	Prepared	Analyzed	Analyst	
Phenol	ND	ug/L	5.0	1	09/13/16	09/14/16 06:2	0 1055	
Pyrene	ND	ug/L	5.0	1	09/13/16	09/14/16 06:2	0 1055	
Pyridine	ND	ug/L	5.0	1	09/13/16	09/14/16 06:2	0 1055	
2,4,5-Trichlorophenol	ND	ug/L	5.0	1	09/13/16	09/14/16 06:2	0 1055	
2,4,6-Trichlorophenol	ND	ug/L	5.0	1	09/13/16	09/14/16 06:2	0 1055	

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090912

Icor Ltd., Middleburg, VA

September 22, 2016

Sample ID: M1Hpt-16 (1-2)			Sampled:			-	e ID: 16090912	2-004
Matrix: SOIL		Date/Time	Received:	09/09/20	016 13:10	% S	olids: 83	
Organochlorine Pesticides	Analytica	ا Method: S	N-846 8081	В	ı	Preparation Meth	nod: SW3550C	
	Result	Units	RΙ	Flag	Dil	Prepared	Analyzed	Analyst
alpha-BHC	ND	ug/kg	4.7	i lug	1	09/12/16	09/14/16 20:40	
gamma-BHC (Lindane)	ND	ug/kg	4.7		1		09/14/16 20:40	
beta-BHC	ND	ug/kg	4.7		1	09/12/16	09/14/16 20:40	1029
delta-BHC	ND	ug/kg	4.7		1	09/12/16	09/14/16 20:40	1029
Heptachlor	ND	ug/kg	4.7		1	09/12/16	09/14/16 20:40	1029
Aldrin	ND	ug/kg	4.7		1	09/12/16	09/14/16 20:40	1029
Heptachlor epoxide	ND	ug/kg	4.7		1	09/12/16	09/14/16 20:40	1029
gamma-Chlordane	ND	ug/kg	4.7		1	09/12/16	09/14/16 20:40	1029
alpha-Chlordane	ND	ug/kg	4.7		1	09/12/16	09/14/16 20:40	1029
4,4-DDE	ND	ug/kg	4.7		1	09/12/16	09/14/16 20:40	1029
Endosulfan I	ND	ug/kg	4.7		1	09/12/16	09/14/16 20:40	1029
Dieldrin	ND	ug/kg	4.7		1	09/12/16	09/14/16 20:40	1029
Endrin	ND	ug/kg	4.7		1	09/12/16	09/14/16 20:40	1029
4,4-DDD	ND	ug/kg	4.7		1	09/12/16	09/14/16 20:40	1029
Endosulfan II	ND	ug/kg	4.7		1	09/12/16	09/14/16 20:40	1029
4,4-DDT	ND	ug/kg	4.7		1	09/12/16	09/14/16 20:40	1029
Endrin aldehyde	ND	ug/kg	4.7		1	09/12/16	09/14/16 20:40	1029
Methoxychlor	ND	ug/kg	4.7		1	09/12/16	09/14/16 20:40	1029
Endosulfan sulfate	ND	ug/kg	4.7		1	09/12/16	09/14/16 20:40	1029
Endrin ketone	ND	ug/kg	4.7		1	09/12/16	09/14/16 20:40	1029
Toxaphene	ND	ug/kg	120		1	09/12/16	09/14/16 20:40	1029
Chlordane	ND	ug/kg	120		1	09/12/16	09/14/16 20:40	1029

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090912

Icor Ltd., Middleburg, VA

September 22, 2016

Sample ID: M1Hpt-16 (1-2)		Date/Tim	e Sampled:	00/02 <i>i</i>	2016 08:00) PSS Sample	e ID: 16090912	2-004	
Matrix: SOIL			Received:			•	olids: 83	004	
Polychlorinated Biphenyls			SW-846 8082			Preparation Method: SW3550C			
	Š					Clean up Method	: SW846 3665A		
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst	
PCB-1016	ND	mg/kg	0.059		1	09/12/16	09/12/16 18:09	1029	
PCB-1221	ND	mg/kg	0.059		1	09/12/16	09/12/16 18:09	1029	
PCB-1232	ND	mg/kg	0.059		1	09/12/16	09/12/16 18:09	1029	
PCB-1242	ND	mg/kg	0.059		1	09/12/16	09/12/16 18:09	1029	
PCB-1248	ND	mg/kg	0.059		1	09/12/16	09/12/16 18:09	1029	
PCB-1254	ND	mg/kg	0.059		1	09/12/16	09/12/16 18:09	1029	
PCB-1260	ND	mg/kg	0.059		1	09/12/16	09/12/16 18:09	1029	
Chlorinated Herbicides	Analytica	ll Method: \$	SW-846 8151	Α		Preparation Method: 8151A			
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst	
Dalapon	ND	ug/kg	620		10	09/12/16	09/13/16 21:08	1029	
Dicamba	ND	ug/kg	25		10	09/12/16	09/13/16 21:08	1029	
MCPP	ND	ug/kg	25,000		10	09/12/16	09/13/16 21:08	1029	
MCPA	ND	ug/kg	25,000		10	09/12/16	09/13/16 21:08	1029	
Dichloroprop	ND	ug/kg	250		10	09/12/16	09/13/16 21:08	1029	
2,4-D	ND	ug/kg	250		10	09/12/16	09/13/16 21:08	1029	
2,4,5-TP (Silvex)	ND	ug/kg	25		10	09/12/16	09/13/16 21:08	1029	
2,4,5-T	ND	ug/kg	25		10	09/12/16	09/13/16 21:08	1029	
Dinoseb	ND	ug/kg	120		10	09/12/16	09/13/16 21:08	1029	
2,4-DB									

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090912

Icor Ltd., Middleburg, VA

September 22, 2016

Sample ID: M1Hpt-16 (4-5)		Date/Time	Sampled:	09/08/201	16 08:0	5 PSS Sample	e ID: 16090912	2-005
Matrix: SOIL		Date/Time	Received:	09/09/201	16 13:10) % S	olids: 82	
Organochlorine Pesticides	Analytica	l Method: S	W-846 8081	В		Preparation Meth	nod: SW3550C	
	Result	Units	RL	Flag D	il	Prepared	Analyzed	Analyst
alpha-BHC	ND	ug/kg	4.9		1	09/12/16	09/14/16 16:56	1029
gamma-BHC (Lindane)	ND	ug/kg	4.9		1	09/12/16	09/14/16 16:56	1029
beta-BHC	ND	ug/kg	4.9		1	09/12/16	09/14/16 16:56	1029
delta-BHC	ND	ug/kg	4.9		1	09/12/16	09/14/16 16:56	1029
Heptachlor	ND	ug/kg	4.9		1	09/12/16	09/14/16 16:56	1029
Aldrin	ND	ug/kg	4.9		1	09/12/16	09/14/16 16:56	1029
Heptachlor epoxide	ND	ug/kg	4.9		1	09/12/16	09/14/16 16:56	1029
gamma-Chlordane	ND	ug/kg	4.9		1	09/12/16	09/14/16 16:56	1029
alpha-Chlordane	ND	ug/kg	4.9		1	09/12/16	09/14/16 16:56	1029
4,4-DDE	ND	ug/kg	4.9		1	09/12/16	09/14/16 16:56	1029
Endosulfan I	ND	ug/kg	4.9		1	09/12/16	09/14/16 16:56	1029
Dieldrin	ND	ug/kg	4.9		1	09/12/16	09/14/16 16:56	1029
Endrin	ND	ug/kg	4.9		1	09/12/16	09/14/16 16:56	1029
4,4-DDD	ND	ug/kg	4.9		1	09/12/16	09/14/16 16:56	1029
Endosulfan II	ND	ug/kg	4.9		1	09/12/16	09/14/16 16:56	1029
4,4-DDT	ND	ug/kg	4.9		1	09/12/16	09/14/16 16:56	1029
Endrin aldehyde	ND	ug/kg	4.9		1	09/12/16	09/14/16 16:56	1029
Methoxychlor	ND	ug/kg	4.9		1	09/12/16	09/14/16 16:56	1029
Endosulfan sulfate	ND	ug/kg	4.9		1	09/12/16	09/14/16 16:56	1029
Endrin ketone	ND	ug/kg	4.9		1	09/12/16	09/14/16 16:56	1029
Toxaphene	ND	ug/kg	120		1	09/12/16	09/14/16 16:56	1029
Chlordane	ND	ug/kg	120		1	09/12/16	09/14/16 16:56	1029

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090912

Icor Ltd., Middleburg, VA

September 22, 2016

Sample ID: M1Hpt-16 (4-5)		Date/Time	Sampled:	09/08/	2016 08:0	5 PSS Sampl	e ID: 1609091	2-005	
Matrix: SOIL	ı	Date/Time	Received:	09/09/	2016 13:1	0 % S	olids: 82		
Polychlorinated Biphenyls	Analytica	I Method: S\	V-846 8082	Α		Preparation Metl	nod: SW3550C		
						Clean up Method			
	Result	Units		Flag	Dil	Prepared	Analyzed	Analyst	
PCB-1016	ND	mg/kg	0.061		1		09/12/16 18:3		
PCB-1221	ND	mg/kg	0.061		1		09/12/16 18:3		
PCB-1232	ND	mg/kg	0.061		1		09/12/16 18:3		
PCB-1242	ND	mg/kg	0.061		1	09/12/16	09/12/16 18:3	8 1029	
PCB-1248	ND	mg/kg	0.061		1	09/12/16	09/12/16 18:3	8 1029	
PCB-1254	ND	mg/kg	0.061		1	09/12/16	09/12/16 18:3	8 1029	
PCB-1260	ND	mg/kg	0.061		1	09/12/16	09/12/16 18:38	8 1029	
Chlorinated Herbicides	Analytica	Analytical Method: SW-846 8151 A Preparation Method: 8151A							
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst	
Dalapon	ND	ug/kg	620		10	09/12/16	09/13/16 21:4	1 1029	
Dicamba	ND	ug/kg	25		10	09/12/16	09/13/16 21:4	1 1029	
MCPP	ND	ug/kg	25,000		10	09/12/16	09/13/16 21:4	1 1029	
MCPA	ND	ug/kg	25,000		10	09/12/16	09/13/16 21:4	1 1029	
Dichloroprop	ND	ug/kg	250		10	09/12/16	09/13/16 21:4	1 1029	
2,4-D	ND	ug/kg	250		10	09/12/16	09/13/16 21:4	1 1029	
2,4,5-TP (Silvex)	ND	ug/kg	25		10	09/12/16	09/13/16 21:4	1 1029	
2,4,5-T	ND	ug/kg	25		10	09/12/16	09/13/16 21:4	1 1029	
Dinoseb	ND	ug/kg	120		10	09/12/16	09/13/16 21:4	1 1029	
2,4-DB	ND	ug/kg	250		10	09/12/16	09/13/16 21:4	1 1029	
Sample ID: M1Hpt-16 (8-9)		Date/Time	Sampled:	09/08/	2016 08:1	D PSS Sampl	e ID: 1609091	2-006	
Matrix: SOIL		Date/Time	Received:	09/09/	2016 13:1	0 % S	olids: 84		
Arsenic	Analytical Method: SW-846 6020 A Preparation Method: 3050B								
-	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst	
Arsenic	6.6	mg/kg	0.56		1	09/12/16	09/13/16 18:5	3 1033	

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090912

Icor Ltd., Middleburg, VA

September 22, 2016

Sample ID: M1Hpt-15 (1-2)			e Sampled:			-	e ID: 1609091	12-007
Matrix: SOIL		Date/Time	Received:	09/09/20	16 13:10	% S	olids: 73	
PP Metals	Analytica	al Method:	SW-846 6020	Α	1	Preparation Meth	nod: 3050B	
_	Result	Units	RL	Flag [Dil	Prepared	Analyzed	Analyst
Antimony	ND	mg/kg	2.7		1	09/12/16	09/13/16 18:5	9 1033
Arsenic	9.6	mg/kg	0.54		1	09/12/16	09/13/16 18:5	9 1033
Beryllium	ND	mg/kg	2.7		1	09/12/16	09/13/16 18:5	9 1033
Cadmium	ND	mg/kg	2.7		1	09/12/16	09/13/16 18:5	9 1033
Chromium	15	mg/kg	2.7		1	09/12/16	09/13/16 18:5	9 1033
Copper	35	mg/kg	2.7		1	09/12/16	09/13/16 18:5	9 1033
Lead	100	mg/kg	2.7		1	09/12/16	09/13/16 18:5	9 1033
Mercury	0.61	mg/kg	0.11		1	09/12/16	09/13/16 18:5	9 1033
Nickel	12	mg/kg	2.7		1	09/12/16	09/13/16 18:5	9 1033
Selenium	ND	mg/kg	2.7		1	09/12/16	09/13/16 18:5	9 1033
Silver	ND	mg/kg	2.7		1	09/12/16	09/13/16 18:5	9 1033
Thallium	ND	mg/kg	2.2		1	09/12/16	09/13/16 18:5	9 1033
Zinc	83	mg/kg	11		1	09/12/16	09/13/16 18:5	9 1033
Sample ID: M1Hpt-15 (4-5)		Date/Tim	e Sampled:	09/08/20	16 08:35	PSS Sample	e ID: 1609091	12-008
Matrix: SOIL		Date/Time	Received:	09/09/20	16 13:10	% S	olids: 83	
Arsenic	Analytica	al Method:	SW-846 6020	Α	l	Preparation Meth	nod: 3050B	
_	Result	Units	RL	Flag [Dil	Prepared	Analyzed	Analyst
Arsenic	1,800	mg/kg	44	1	100	09/12/16	09/14/16 15:3	9 1033

PHASE SEPARATION SCIENCE, INC.



09/12/16 09/14/16 15:45 1033

CERTIFICATE OF ANALYSIS

No: 16090912

Icor Ltd., Middleburg, VA

September 22, 2016

Project Name: Robinson Terminal North Project Location: 500/501 N. Union St.

Zinc

Sample ID: M1Hpt-14 (1-2) Matrix: SOIL	Date/Time Sampled: 09/08/2016 09:35 Date/Time Received: 09/09/2016 13:10							
PP Metals						Preparation Method: 3050B		
	Result	Units	RL	Flag Dil		Prepared	Analyzed	Analyst
Antimony	18	mg/kg	2.2	1			09/13/16 22:48	
Arsenic	730	mg/kg	8.9	20)	09/12/16	09/14/16 15:45	1033
Beryllium	ND	mg/kg	2.2	1		09/12/16	09/13/16 22:48	1033
Cadmium	7.7	mg/kg	2.2	1		09/12/16	09/13/16 22:48	1033
Chromium	16	mg/kg	2.2	1		09/12/16	09/13/16 22:48	1033
Copper	780	mg/kg	45	20)	09/12/16	09/14/16 15:45	1033
Lead	380	mg/kg	45	20)	09/12/16	09/14/16 15:45	1033
Mercury	18	mg/kg	1.8	20)	09/12/16	09/14/16 15:45	1033
Nickel	12	mg/kg	2.2	1		09/12/16	09/13/16 22:48	1033
Selenium	5.0	mg/kg	2.2	1		09/12/16	09/13/16 22:48	1033
Silver	2.3	mg/kg	2.2	1		09/12/16	09/13/16 22:48	1033
Thallium	5.6	mg/kg	1.8	1		09/12/16	09/13/16 22:48	1033

180

20

1,300

mg/kg

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090912

Icor Ltd., Middleburg, VA

September 22, 2016

Sample ID: M1Hpt-14 (1-2)			Sampled:			•	e ID: 16090912	2-009
Matrix: SOIL	[Date/Time	Received:	09/09/2	016 13:10	% S	olids: 89	
Organochlorine Pesticides	Analytica	l Method: S	W-846 8081	В	F	Preparation Meth	nod: SW3550C	
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
alpha-BHC	ND	ug/kg	4.5		1	09/12/16	09/14/16 21:07	1029
gamma-BHC (Lindane)	ND	ug/kg	4.5		1	09/12/16	09/14/16 21:07	1029
beta-BHC	ND	ug/kg	4.5		1	09/12/16	09/14/16 21:07	1029
delta-BHC	ND	ug/kg	4.5		1	09/12/16	09/14/16 21:07	1029
Heptachlor	ND	ug/kg	4.5		1	09/12/16	09/14/16 21:07	1029
Aldrin	ND	ug/kg	4.5		1	09/12/16	09/14/16 21:07	1029
Heptachlor epoxide	ND	ug/kg	4.5		1	09/12/16	09/14/16 21:07	1029
gamma-Chlordane	ND	ug/kg	4.5		1	09/12/16	09/14/16 21:07	1029
alpha-Chlordane	ND	ug/kg	4.5		1	09/12/16	09/14/16 21:07	1029
4,4-DDE	ND	ug/kg	4.5		1	09/12/16	09/14/16 21:07	1029
Endosulfan I	ND	ug/kg	4.5		1	09/12/16	09/14/16 21:07	1029
Dieldrin	ND	ug/kg	4.5		1	09/12/16	09/14/16 21:07	1029
Endrin	ND	ug/kg	4.5		1	09/12/16	09/14/16 21:07	1029
4,4-DDD	ND	ug/kg	4.5		1	09/12/16	09/14/16 21:07	1029
Endosulfan II	ND	ug/kg	4.5		1	09/12/16	09/14/16 21:07	1029
4,4-DDT	ND	ug/kg	4.5		1	09/12/16	09/14/16 21:07	1029
Endrin aldehyde	ND	ug/kg	4.5		1	09/12/16	09/14/16 21:07	1029
Methoxychlor	ND	ug/kg	4.5		1	09/12/16	09/14/16 21:07	1029
Endosulfan sulfate	ND	ug/kg	4.5		1	09/12/16	09/14/16 21:07	1029
Endrin ketone	ND	ug/kg	4.5		1	09/12/16	09/14/16 21:07	1029
Toxaphene	ND	ug/kg	110		1	09/12/16	09/14/16 21:07	1029
Chlordane	ND	ug/kg	110		1	09/12/16	09/14/16 21:07	1029

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090912

Icor Ltd., Middleburg, VA

September 22, 2016

Sample ID: M1Hpt-14 (1-2)		Date/Time	Sampled:	09/08/	2016 09:3	5 PSS Sampl	e ID: 1609091	2-009
Matrix: SOIL	ı	Date/Time	Received:	09/09/	2016 13:1	0 % S	olids: 89	
Polychlorinated Biphenyls	Analytica	I Method: S\	N-846 8082	Α		Preparation Metl	nod: SW3550C	
						Clean up Method		
	Result	Units		Flag	Dil	Prepared	Analyzed	Analyst
PCB-1016	ND	mg/kg	0.056		1		09/12/16 18:3	
PCB-1221	ND	mg/kg	0.056		1		09/12/16 18:3	
PCB-1232	ND	mg/kg	0.056		1		09/12/16 18:3	
PCB-1242	ND	mg/kg	0.056		1	09/12/16	09/12/16 18:3	8 1029
PCB-1248	ND	mg/kg	0.056		1	09/12/16	09/12/16 18:3	8 1029
PCB-1254	ND	mg/kg	0.056		1	09/12/16	09/12/16 18:3	8 1029
PCB-1260	ND	mg/kg	0.056		1	09/12/16	09/12/16 18:3	8 1029
Chlorinated Herbicides	Analytica	ll Method: S\	N-846 8151	Α		Preparation Met	nod: 8151A	
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Dalapon	ND	ug/kg	540		10	09/12/16	09/13/16 22:1	3 1029
Dicamba	ND	ug/kg	22		10	09/12/16	09/13/16 22:1	3 1029
MCPP	ND	ug/kg	22,000		10	09/12/16	09/13/16 22:1	3 1029
MCPA	ND	ug/kg	22,000		10	09/12/16	09/13/16 22:1	3 1029
Dichloroprop	ND	ug/kg	220		10	09/12/16	09/13/16 22:1	3 1029
2,4-D	ND	ug/kg	220		10	09/12/16	09/13/16 22:1	3 1029
2,4,5-TP (Silvex)	ND	ug/kg	22		10	09/12/16	09/13/16 22:1	3 1029
2,4,5-T	ND	ug/kg	22		10	09/12/16	09/13/16 22:1	3 1029
Dinoseb	ND	ug/kg	110		10	09/12/16	09/13/16 22:1	3 1029
2,4-DB	ND	ug/kg	220		10	09/12/16	09/13/16 22:1	3 1029
Sample ID: M1Hpt-14 (4-5)		Date/Time	Sampled:	09/08/	2016 09:4	0 PSS Sampl	e ID: 1609091	2-010
Matrix: SOIL	!	Date/Time	Received:	09/09/	2016 13:1	0 % S	olids: 85	
Arsenic	Analytica	I Method: S\	N-846 6020	Α		Preparation Met	nod: 3050B	
-	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Arsenic	93	mg/kg	0.48		1	09/12/16	09/13/16 22:5	5 1033

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090912

Icor Ltd., Middleburg, VA

September 22, 2016

Sample ID: M1Hpt-14 (5-6) Matrix: SOIL		Date/Time Date/Time F	-			-	e ID: 16090912 olids: 83	2-011
TCL Volatile Organic Compounds		l Method: SV				ر ہوں Preparation Meth		
	Result	Units	RL	Flag D	il	Prepared	Analyzed	Analyst
Acetone	45	ug/kg	19	<u>.</u>	1	09/15/16	09/15/16 19:37	7 1011
Benzene	ND	ug/kg	4.7		1	09/15/16	09/15/16 19:37	1011
Bromochloromethane	ND	ug/kg	4.7		1	09/15/16	09/15/16 19:37	7 1011
Bromodichloromethane	ND	ug/kg	4.7		1	09/15/16	09/15/16 19:37	1011
Bromoform	ND	ug/kg	4.7		1	09/15/16	09/15/16 19:37	1011
Bromomethane	ND	ug/kg	4.7		1	09/15/16	09/15/16 19:37	1011
2-Butanone (MEK)	ND	ug/kg	19		1	09/15/16	09/15/16 19:37	1011
Carbon Disulfide	ND	ug/kg	9.5		1	09/15/16	09/15/16 19:37	7 1011
Carbon Tetrachloride	ND	ug/kg	4.7		1	09/15/16	09/15/16 19:37	1011
Chlorobenzene	ND	ug/kg	4.7		1	09/15/16	09/15/16 19:37	1011
Chloroethane	ND	ug/kg	4.7		1	09/15/16	09/15/16 19:37	1011
Chloroform	ND	ug/kg	4.7		1	09/15/16	09/15/16 19:37	1011
Chloromethane	ND	ug/kg	4.7		1	09/15/16	09/15/16 19:37	7 1011
Cyclohexane	ND	ug/kg	19		1	09/15/16	09/15/16 19:37	1011
1,2-Dibromo-3-Chloropropane	ND	ug/kg	38		1	09/15/16	09/15/16 19:37	1011
Dibromochloromethane	ND	ug/kg	4.7		1	09/15/16	09/15/16 19:37	1011
1,2-Dibromoethane (EDB)	ND	ug/kg	4.7		1	09/15/16	09/15/16 19:37	1011
1,2-Dichlorobenzene	ND	ug/kg	4.7		1	09/15/16	09/15/16 19:37	1011
1,3-Dichlorobenzene	ND	ug/kg	4.7		1	09/15/16	09/15/16 19:37	1011
1,4-Dichlorobenzene	ND	ug/kg	4.7		1	09/15/16	09/15/16 19:37	1011
Dichlorodifluoromethane	ND	ug/kg	4.7		1	09/15/16	09/15/16 19:37	1011
1,1-Dichloroethane	ND	ug/kg	4.7		1	09/15/16	09/15/16 19:37	1011
1,2-Dichloroethane	ND	ug/kg	4.7		1	09/15/16	09/15/16 19:37	7 1011
1,1-Dichloroethene	ND	ug/kg	4.7		1	09/15/16	09/15/16 19:37	1011
1,2-Dichloropropane	ND	ug/kg	4.7		1	09/15/16	09/15/16 19:37	1011
cis-1,2-Dichloroethene	ND	ug/kg	4.7		1	09/15/16	09/15/16 19:37	1011
cis-1,3-Dichloropropene	ND	ug/kg	4.7		1	09/15/16	09/15/16 19:37	1011
trans-1,2-Dichloroethene	ND	ug/kg	4.7		1	09/15/16	09/15/16 19:37	7 1011
trans-1,3-Dichloropropene	ND	ug/kg	4.7		1	09/15/16	09/15/16 19:37	7 1011
Ethylbenzene	ND	ug/kg	4.7		1	09/15/16	09/15/16 19:37	1011

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090912

Icor Ltd., Middleburg, VA

September 22, 2016

Sample ID: M1Hpt-14 (5-6)			e Sampled:			PSS Sample ID: 16090912-01		
Matrix: SOIL		Date/Time	Received:	09/09/2	016 13:10	% S	olids: 83	
TCL Volatile Organic Compounds	Analytica	l Method: S	SW-846 8260	В	F	Preparation Meth	nod: 5035A	
_	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
2-Hexanone	ND	ug/kg	19		1	09/15/16	09/15/16 19:37	1011
Isopropylbenzene	ND	ug/kg	4.7		1	09/15/16	09/15/16 19:37	1011
Methyl Acetate	ND	ug/kg	19		1	09/15/16	09/15/16 19:37	1011
Methylcyclohexane	ND	ug/kg	19		1	09/15/16	09/15/16 19:37	1011
Methylene Chloride	ND	ug/kg	4.7		1	09/15/16	09/15/16 19:37	' 1011
4-Methyl-2-Pentanone	ND	ug/kg	19		1	09/15/16	09/15/16 19:37	' 1011
Methyl-t-butyl ether	ND	ug/kg	4.7		1	09/15/16	09/15/16 19:37	1011
Naphthalene	ND	ug/kg	4.7		1	09/15/16	09/15/16 19:37	1011
Styrene	ND	ug/kg	4.7		1	09/15/16	09/15/16 19:37	1011
1,1,2,2-Tetrachloroethane	ND	ug/kg	4.7		1	09/15/16	09/15/16 19:37	1011
Tetrachloroethene	ND	ug/kg	4.7		1	09/15/16	09/15/16 19:37	1011
Toluene	ND	ug/kg	4.7		1	09/15/16	09/15/16 19:37	1011
1,2,3-Trichlorobenzene	ND	ug/kg	4.7		1	09/15/16	09/15/16 19:37	1011
1,2,4-Trichlorobenzene	ND	ug/kg	4.7		1	09/15/16	09/15/16 19:37	1011
1,1,1-Trichloroethane	ND	ug/kg	4.7		1	09/15/16	09/15/16 19:37	1011
1,1,2-Trichloroethane	ND	ug/kg	4.7		1	09/15/16	09/15/16 19:37	1011
Trichloroethene	ND	ug/kg	4.7		1	09/15/16	09/15/16 19:37	1011
Trichlorofluoromethane	ND	ug/kg	4.7		1	09/15/16	09/15/16 19:37	1011
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	ug/kg	4.7		1	09/15/16	09/15/16 19:37	1011
Vinyl Chloride	ND	ug/kg	4.7		1	09/15/16	09/15/16 19:37	1011
m,p-Xylenes	ND	ug/kg	9.5		1	09/15/16	09/15/16 19:37	1011
o-Xylene	ND	ug/kg	4.7		1	09/15/16	09/15/16 19:37	1011

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090912

Icor Ltd., Middleburg, VA

September 22, 2016

Sample ID: M1Hpt-14 (25-26) Matrix: SOIL			Sampled: Received:			·	e ID: 1609091 olids: 85	2-012
Total Petroleum Hydrocarbons - DRO	Analytica	ll Method: S	W-846 8015	С		Preparation Meth	nod: SW3550C	
_	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-DRO (Diesel Range Organics)	ND	mg/kg	12		1	09/14/16	09/16/16 03:28	3 1045
Total Petroleum Hydrocarbons-GRO	Analytica	ıl Method: S	SW-846 80150	С		Preparation Meth	nod: 5030	
_	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-GRO (Gasoline Range Organics)	ND	ug/kg	110		1	09/12/16	09/13/16 01:29	9 1035

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

Date/Time Sampled: 09/08/2016 10:10 PSS Sample ID: 16090912-012

No: 16090912

Icor Ltd., Middleburg, VA

September 22, 2016

Project Name: Robinson Terminal North Project Location: 500/501 N. Union St.

Sample ID: M1Hpt-14 (25-26)

Sample ID: M1Hpt-14 (25-26)			Sampled:			PSS Sample	e ID: 16090912	2-012
Matrix: SOIL		Date/Time	Received:	09/09/20	16 13:10	% S	olids: 85	
TCL Volatile Organic Compounds	Analytica	I Method: S	W-846 8260	В	F	Preparation Meth	nod: 5035A	
_	Result	Units	RL	Flag [Dil	Prepared	Analyzed	Analyst
Acetone	ND	ug/kg	20		1	09/15/16	09/15/16 20:16	5 1011
Benzene	ND	ug/kg	5.0		1	09/15/16	09/15/16 20:16	5 1011
Bromochloromethane	ND	ug/kg	5.0		1	09/15/16	09/15/16 20:16	5 1011
Bromodichloromethane	ND	ug/kg	5.0		1	09/15/16	09/15/16 20:16	3 1011
Bromoform	ND	ug/kg	5.0		1	09/15/16	09/15/16 20:16	3 1011
Bromomethane	ND	ug/kg	5.0		1	09/15/16	09/15/16 20:16	3 1011
2-Butanone (MEK)	ND	ug/kg	20		1	09/15/16	09/15/16 20:16	5 1011
Carbon Disulfide	ND	ug/kg	10		1	09/15/16	09/15/16 20:16	6 1011
Carbon Tetrachloride	ND	ug/kg	5.0		1	09/15/16	09/15/16 20:16	3 1011
Chlorobenzene	ND	ug/kg	5.0		1	09/15/16	09/15/16 20:16	5 1011
Chloroethane	ND	ug/kg	5.0		1	09/15/16	09/15/16 20:16	5 1011
Chloroform	ND	ug/kg	5.0		1	09/15/16	09/15/16 20:16	6 1011
Chloromethane	ND	ug/kg	5.0		1	09/15/16	09/15/16 20:16	5 1011
Cyclohexane	ND	ug/kg	20		1	09/15/16	09/15/16 20:16	3 1011
1,2-Dibromo-3-Chloropropane	ND	ug/kg	40		1	09/15/16	09/15/16 20:16	3 1011
Dibromochloromethane	ND	ug/kg	5.0		1	09/15/16	09/15/16 20:16	3 1011
1,2-Dibromoethane (EDB)	ND	ug/kg	5.0		1	09/15/16	09/15/16 20:16	3 1011
1,2-Dichlorobenzene	ND	ug/kg	5.0		1	09/15/16	09/15/16 20:16	3 1011
1,3-Dichlorobenzene	ND	ug/kg	5.0		1	09/15/16	09/15/16 20:16	3 1011
1,4-Dichlorobenzene	ND	ug/kg	5.0		1	09/15/16	09/15/16 20:16	3 1011
Dichlorodifluoromethane	ND	ug/kg	5.0		1	09/15/16	09/15/16 20:16	3 1011
1,1-Dichloroethane	ND	ug/kg	5.0		1	09/15/16	09/15/16 20:16	3 1011
1,2-Dichloroethane	ND	ug/kg	5.0		1	09/15/16	09/15/16 20:16	3 1011
1,1-Dichloroethene	ND	ug/kg	5.0		1	09/15/16	09/15/16 20:16	3 1011
1,2-Dichloropropane	ND	ug/kg	5.0		1	09/15/16	09/15/16 20:16	3 1011
cis-1,2-Dichloroethene	ND	ug/kg	5.0		1	09/15/16	09/15/16 20:16	3 1011
cis-1,3-Dichloropropene	ND	ug/kg	5.0		1	09/15/16	09/15/16 20:16	3 1011
trans-1,2-Dichloroethene	ND	ug/kg	5.0		1	09/15/16	09/15/16 20:16	3 1011
trans-1,3-Dichloropropene	ND	ug/kg	5.0		1	09/15/16	09/15/16 20:16	3 1011
Ethylbenzene	ND	ug/kg	5.0		1	09/15/16	09/15/16 20:16	3 1011

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090912

Icor Ltd., Middleburg, VA

September 22, 2016

Sample ID: M1Hpt-14 (25-26)		Date/Time	Sampled:	09/08/2	016 10:10	PSS Sample	e ID: 16090912	2-012
Matrix: SOIL		Date/Time	Received:	09/09/2	016 13:10	% S	olids: 85	
TCL Volatile Organic Compounds	Analytica	l Method: S	W-846 8260	В		Preparation Meth	nod: 5035A	
_	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
2-Hexanone	ND	ug/kg	20		1	09/15/16	09/15/16 20:16	1011
Isopropylbenzene	ND	ug/kg	5.0		1	09/15/16	09/15/16 20:16	1011
Methyl Acetate	ND	ug/kg	20		1	09/15/16	09/15/16 20:16	1011
Methylcyclohexane	ND	ug/kg	20		1	09/15/16	09/15/16 20:16	1011
Methylene Chloride	ND	ug/kg	5.0		1	09/15/16	09/15/16 20:16	1011
4-Methyl-2-Pentanone	ND	ug/kg	20		1	09/15/16	09/15/16 20:16	1011
Methyl-t-butyl ether	ND	ug/kg	5.0		1	09/15/16	09/15/16 20:16	1011
Naphthalene	ND	ug/kg	5.0		1	09/15/16	09/15/16 20:16	1011
Styrene	ND	ug/kg	5.0		1	09/15/16	09/15/16 20:16	1011
1,1,2,2-Tetrachloroethane	ND	ug/kg	5.0		1	09/15/16	09/15/16 20:16	1011
Tetrachloroethene	ND	ug/kg	5.0		1	09/15/16	09/15/16 20:16	1011
Toluene	ND	ug/kg	5.0		1	09/15/16	09/15/16 20:16	1011
1,2,3-Trichlorobenzene	ND	ug/kg	5.0		1	09/15/16	09/15/16 20:16	1011
1,2,4-Trichlorobenzene	ND	ug/kg	5.0		1	09/15/16	09/15/16 20:16	1011
1,1,1-Trichloroethane	ND	ug/kg	5.0		1	09/15/16	09/15/16 20:16	1011
1,1,2-Trichloroethane	ND	ug/kg	5.0		1	09/15/16	09/15/16 20:16	1011
Trichloroethene	ND	ug/kg	5.0		1	09/15/16	09/15/16 20:16	1011
Trichlorofluoromethane	ND	ug/kg	5.0		1	09/15/16	09/15/16 20:16	1011
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	ug/kg	5.0		1	09/15/16	09/15/16 20:16	1011
Vinyl Chloride	ND	ug/kg	5.0		1	09/15/16	09/15/16 20:16	1011
m,p-Xylenes	ND	ug/kg	10		1	09/15/16	09/15/16 20:16	1011
o-Xylene	ND	ug/kg	5.0		1	09/15/16	09/15/16 20:16	1011

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

Date/Time Sampled: 09/08/2016 10:10 PSS Sample ID: 16090912-012

No: 16090912

Icor Ltd., Middleburg, VA

September 22, 2016

Project Name: Robinson Terminal North Project Location: 500/501 N. Union St.

Sample ID: M1Hpt-14 (25-26)

Sample ID: M1Hpt-14 (25-26)			Sampled:					2-012
Matrix: SOIL		Date/Time	Received:	09/09/2	016 13:10	% S	olids: 85	
TCL Semivolatile Organic Compounds	Analytica	l Method: S	W-846 8270	С	F	Preparation Meth	nod: SW3550C	
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acenaphthene	ND	ug/kg	190		1	09/12/16	09/12/16 16:17	1055
Acenaphthylene	ND	ug/kg	190		1	09/12/16	09/12/16 16:17	1055
Acetophenone	ND	ug/kg	190		1	09/12/16	09/12/16 16:17	1055
Anthracene	ND	ug/kg	190		1	09/12/16	09/12/16 16:17	1055
Atrazine	ND	ug/kg	190		1	09/12/16	09/12/16 16:17	1055
Benzo(a)anthracene	ND	ug/kg	190		1	09/12/16	09/12/16 16:17	1055
Benzo(a)pyrene	ND	ug/kg	190		1	09/12/16	09/12/16 16:17	1055
Benzo(b)fluoranthene	ND	ug/kg	190		1	09/12/16	09/12/16 16:17	1055
Benzo(g,h,i)perylene	ND	ug/kg	190		1	09/12/16	09/12/16 16:17	1055
Benzo(k)fluoranthene	ND	ug/kg	190		1	09/12/16	09/12/16 16:17	1055
Biphenyl (Diphenyl)	ND	ug/kg	190		1	09/12/16	09/12/16 16:17	1055
Butyl benzyl phthalate	ND	ug/kg	190		1	09/12/16	09/12/16 16:17	1055
bis(2-chloroethoxy) methane	ND	ug/kg	190		1	09/12/16	09/12/16 16:17	1055
bis(2-chloroethyl) ether	ND	ug/kg	190		1	09/12/16	09/12/16 16:17	1055
bis(2-chloroisopropyl) ether	ND	ug/kg	190		1	09/12/16	09/12/16 16:17	1055
bis(2-ethylhexyl) phthalate	ND	ug/kg	190		1	09/12/16	09/12/16 16:17	1055
4-Bromophenylphenyl ether	ND	ug/kg	190		1	09/12/16	09/12/16 16:17	1055
Di-n-butyl phthalate	ND	ug/kg	190		1	09/12/16	09/12/16 16:17	1055
Carbazole	ND	ug/kg	190		1	09/12/16	09/12/16 16:17	1055
Caprolactam	ND	ug/kg	190		1	09/12/16	09/12/16 16:17	1055
4-Chloro-3-methyl phenol	ND	ug/kg	190		1	09/12/16	09/12/16 16:17	1055
4-Chloroaniline	ND	ug/kg	190		1	09/12/16	09/12/16 16:17	1055
2-Chloronaphthalene	ND	ug/kg	190		1	09/12/16	09/12/16 16:17	1055
2-Chlorophenol	ND	ug/kg	190		1	09/12/16	09/12/16 16:17	1055
4-Chlorophenyl Phenyl ether	ND	ug/kg	190		1	09/12/16	09/12/16 16:17	1055
Chrysene	ND	ug/kg	190		1	09/12/16	09/12/16 16:17	1055
Dibenz(a,h)Anthracene	ND	ug/kg	190		1	09/12/16	09/12/16 16:17	1055
Dibenzofuran	ND	ug/kg	190		1	09/12/16	09/12/16 16:17	1055
3,3-Dichlorobenzidine	ND	ug/kg	190		1	09/12/16	09/12/16 16:17	1055
2,4-Dichlorophenol	ND	ug/kg	190		1	09/12/16	09/12/16 16:17	1055

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

Date/Time Sampled: 09/08/2016 10:10 PSS Sample ID: 16090912-012

No: 16090912

Icor Ltd., Middleburg, VA

September 22, 2016

Project Name: Robinson Terminal North Project Location: 500/501 N. Union St.

Sample ID: M1Hpt-14 (25-26)

Sample ID: M1Hpt-14 (25-26)			Sampled:				S Sample ID: 16090912-012		
Matrix: SOIL		Date/Time	Received:	09/09/20	016 13:10	% S	olids: 85		
TCL Semivolatile Organic Compounds	Analytica	l Method: S	W-846 8270	С	F	Preparation Meth	nod: SW3550C		
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst	
Diethyl phthalate	ND	ug/kg	190		1	09/12/16	09/12/16 16:17	1055	
Dimethyl phthalate	ND	ug/kg	190		1	09/12/16	09/12/16 16:17	1055	
2,4-Dimethylphenol	ND	ug/kg	190		1	09/12/16	09/12/16 16:17	1055	
4,6-Dinitro-2-methyl phenol	ND	ug/kg	190		1	09/12/16	09/12/16 16:17	1055	
2,4-Dinitrophenol	ND	ug/kg	390		1	09/12/16	09/12/16 16:17	1055	
2,4-Dinitrotoluene	ND	ug/kg	190		1	09/12/16	09/12/16 16:17	1055	
2,6-Dinitrotoluene	ND	ug/kg	190		1	09/12/16	09/12/16 16:17	1055	
Fluoranthene	ND	ug/kg	190		1	09/12/16	09/12/16 16:17	1055	
Fluorene	ND	ug/kg	190		1	09/12/16	09/12/16 16:17	1055	
Hexachlorobenzene	ND	ug/kg	190		1	09/12/16	09/12/16 16:17	1055	
Hexachlorobutadiene	ND	ug/kg	190		1	09/12/16	09/12/16 16:17	1055	
Hexachlorocyclopentadiene	ND	ug/kg	190		1	09/12/16	09/12/16 16:17	1055	
Hexachloroethane	ND	ug/kg	190		1	09/12/16	09/12/16 16:17	1055	
Indeno(1,2,3-c,d)Pyrene	ND	ug/kg	190		1	09/12/16	09/12/16 16:17	1055	
Isophorone	ND	ug/kg	190		1	09/12/16	09/12/16 16:17	1055	
2-Methylnaphthalene	ND	ug/kg	190		1	09/12/16	09/12/16 16:17	1055	
2-Methyl phenol	ND	ug/kg	190		1	09/12/16	09/12/16 16:17	1055	
3&4-Methylphenol	ND	ug/kg	190		1	09/12/16	09/12/16 16:17	1055	
Naphthalene	ND	ug/kg	190		1	09/12/16	09/12/16 16:17	1055	
2-Nitroaniline	ND	ug/kg	190		1	09/12/16	09/12/16 16:17	1055	
3-Nitroaniline	ND	ug/kg	190		1	09/12/16	09/12/16 16:17	1055	
4-Nitroaniline	ND	ug/kg	190		1	09/12/16	09/12/16 16:17	1055	
Nitrobenzene	ND	ug/kg	190		1	09/12/16	09/12/16 16:17	1055	
2-Nitrophenol	ND	ug/kg	190		1	09/12/16	09/12/16 16:17	1055	
4-Nitrophenol	ND	ug/kg	190		1	09/12/16	09/12/16 16:17	1055	
N-Nitrosodi-n-propyl amine	ND	ug/kg	190		1	09/12/16	09/12/16 16:17	1055	
N-Nitrosodiphenylamine	ND	ug/kg	190		1	09/12/16	09/12/16 16:17	1055	
Di-n-octyl phthalate	ND	ug/kg	190		1	09/12/16	09/12/16 16:17	1055	
Pentachlorophenol	ND	ug/kg	190		1	09/12/16	09/12/16 16:17	1055	
Phenanthrene	ND	ug/kg	190		1	09/12/16	09/12/16 16:17	1055	

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090912

Icor Ltd., Middleburg, VA

September 22, 2016

Sample ID: M1Hpt-14 (25-26) Matrix: SOIL			-)9/08/2016 10)9/09/2016 1:		e ID: 1609091 olids: 85	2-012
TCL Semivolatile Organic Compounds	Analytica	I Method: S\	N-846 8270 C		Preparation Meth	nod: SW3550C	
	Result	Units	RL	Flag Dil	Prepared	Analyzed	Analyst
Phenol	ND	ug/kg	190	1	09/12/16	09/12/16 16:1	7 1055
Pyrene	ND	ug/kg	190	1	09/12/16	09/12/16 16:1	7 1055
Pyridine	ND	ug/kg	190	1	09/12/16	09/12/16 16:1	7 1055
2,4,5-Trichlorophenol	ND	ug/kg	190	1	09/12/16	09/12/16 16:1	7 1055
2,4,6-Trichlorophenol	ND	ug/kg	190	1	09/12/16	09/12/16 16:1	7 1055

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090912

Icor Ltd., Middleburg, VA

September 22, 2016

Project Name: Robinson Terminal North Project Location: 500/501 N. Union St.

Sample ID: M1Hpt-20 (1.5-2.5)			e Sampled:			-	e ID: 16090912	2-013	
Matrix: SOIL		Date/Time	e Received:	09/09/20	716 13:10	% S	% Solids: 79		
PP Metals	Analytica	ıl Method:	SW-846 6020	Α		Preparation Meth	nod: 3050B		
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst	
Antimony	13	mg/kg	2.6		1	09/12/16	09/13/16 23:01	1033	
Arsenic	480	mg/kg	5.2		10	09/12/16	09/14/16 15:52	1033	
Beryllium	ND	mg/kg	2.6		1	09/12/16	09/13/16 23:01	1033	
Cadmium	5.9	mg/kg	2.6		1	09/12/16	09/13/16 23:01	1033	
Chromium	21	mg/kg	2.6		1	09/12/16	09/14/16 14:45	1033	
Copper	1,400	mg/kg	26		10	09/12/16	09/14/16 15:52	1033	
Lead	690	mg/kg	26		10	09/12/16	09/14/16 15:52	1033	
Mercury	3.5	mg/kg	1.0		10	09/12/16	09/14/16 15:52	1033	
Nickel	14	mg/kg	2.6		1	09/12/16	09/13/16 23:01	1033	
Selenium	4.4	mg/kg	2.6		1	09/12/16	09/13/16 23:01	1033	
Silver	4.5	mg/kg	2.6		1	09/12/16	09/13/16 23:01	1033	
Thallium	ND	mg/kg	2.1		1	09/12/16	09/13/16 23:01	1033	
Zinc	2,700	mg/kg	100		10	09/12/16	09/14/16 15:52	1033	

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090912

Icor Ltd., Middleburg, VA

September 22, 2016

Sample ID: M1Hpt-20 (1.5-2.5)			e Sampled:				e ID: 16090912	2-013
Matrix: SOIL		Date/Time	e Received:	09/09/20	16 13:10	% S	olids: 79	
Organochlorine Pesticides	Analytica	l Method:	SW-846 8081	В		Preparation Metl	nod: SW3550C	
	Result	Units	RL	Flag D	Dil	Prepared	Analyzed	Analyst
alpha-BHC	ND	ug/kg	5.0		1	09/12/16	09/14/16 21:35	1029
gamma-BHC (Lindane)	ND	ug/kg	5.0		1	09/12/16	09/14/16 21:35	1029
beta-BHC	ND	ug/kg	5.0		1	09/12/16	09/14/16 21:35	1029
delta-BHC	ND	ug/kg	5.0		1	09/12/16	09/14/16 21:35	1029
Heptachlor	ND	ug/kg	5.0		1	09/12/16	09/14/16 21:35	1029
Aldrin	ND	ug/kg	5.0		1	09/12/16	09/14/16 21:35	1029
Heptachlor epoxide	ND	ug/kg	5.0		1	09/12/16	09/14/16 21:35	1029
gamma-Chlordane	ND	ug/kg	5.0		1	09/12/16	09/14/16 21:35	1029
alpha-Chlordane	ND	ug/kg	5.0		1	09/12/16	09/14/16 21:35	1029
4,4-DDE	ND	ug/kg	5.0		1	09/12/16	09/14/16 21:35	1029
Endosulfan I	ND	ug/kg	5.0		1	09/12/16	09/14/16 21:35	1029
Dieldrin	ND	ug/kg	5.0		1	09/12/16	09/14/16 21:35	1029
Endrin	ND	ug/kg	5.0		1	09/12/16	09/14/16 21:35	1029
4,4-DDD	ND	ug/kg	5.0		1	09/12/16	09/14/16 21:35	1029
Endosulfan II	ND	ug/kg	5.0		1	09/12/16	09/14/16 21:35	1029
4,4-DDT	ND	ug/kg	5.0		1	09/12/16	09/14/16 21:35	1029
Endrin aldehyde	ND	ug/kg	5.0		1	09/12/16	09/14/16 21:35	1029
Methoxychlor	ND	ug/kg	5.0		1	09/12/16	09/14/16 21:35	1029
Endosulfan sulfate	ND	ug/kg	5.0		1	09/12/16	09/14/16 21:35	1029
Endrin ketone	ND	ug/kg	5.0		1	09/12/16	09/14/16 21:35	1029
Toxaphene	ND	ug/kg	120		1	09/12/16	09/14/16 21:35	1029
Chlordane	ND	ug/kg	120		1	09/12/16	09/14/16 21:35	1029

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090912

Icor Ltd., Middleburg, VA

September 22, 2016

Sample ID: M1Hpt-20 (1.5-2.5)		Date/Time	Sampled:	09/08/	2016 13:30) PSS Sample	e ID: 1609091	2-013
Matrix: SOIL	1	Date/Time	Received:	09/09/	2016 13:10) % S	olids: 79	
Polychlorinated Biphenyls	Analytica	l Method: S	W-846 8082	Α		Preparation Meth	nod: SW3550C	
						Clean up Method		
	Result	Units		Flag	Dil	Prepared	Analyzed	Analyst
PCB-1016	ND	mg/kg	0.062		1		09/12/16 19:0	
PCB-1221	ND	mg/kg	0.062		1		09/12/16 19:0	
PCB-1232	ND	mg/kg	0.062		1		09/12/16 19:0	
PCB-1242	ND	mg/kg	0.062		1	09/12/16	09/12/16 19:0	7 1029
PCB-1248	ND	mg/kg	0.062		1	09/12/16	09/12/16 19:0	7 1029
PCB-1254	ND	mg/kg	0.062		1	09/12/16	09/12/16 19:0	7 1029
PCB-1260	ND	mg/kg	0.062		1	09/12/16	09/12/16 19:0	7 1029
Chlorinated Herbicides	Analytica	ıl Method: S	W-846 8151	Α		Preparation Meth	nod: 8151A	
_	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Dalapon	ND	ug/kg	650		10	09/12/16	09/13/16 22:4	6 1029
Dicamba	ND	ug/kg	26		10	09/12/16	09/13/16 22:4	6 1029
MCPP	ND	ug/kg	26,000		10	09/12/16	09/13/16 22:4	6 1029
MCPA	ND	ug/kg	26,000		10	09/12/16	09/13/16 22:4	6 1029
Dichloroprop	ND	ug/kg	260		10	09/12/16	09/13/16 22:4	6 1029
2,4-D	ND	ug/kg	260		10	09/12/16	09/13/16 22:4	6 1029
2,4,5-TP (Silvex)	ND	ug/kg	26		10	09/12/16	09/13/16 22:4	6 1029
2,4,5-T	ND	ug/kg	26		10	09/12/16	09/13/16 22:4	6 1029
Dinoseb	ND	ug/kg	130		10	09/12/16	09/13/16 22:4	6 1029
2,4-DB	ND	ug/kg	260		10	09/12/16	09/13/16 22:4	6 1029
Sample ID: M1Hpt-20 (4-5)		Date/Time	Sampled:	09/08/	2016 13:3	PSS Sample	e ID: 1609091	2-014
Matrix: SOIL		Date/Time	Received:	09/09/	2016 13:10) % s	olids: 87	
Arsenic			W-846 6020			Preparation Meth	nod: 3050B	
_	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Arsenic	5.8	mg/kg	0.42		1	09/12/16	09/13/16 23:0	7 1033



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

ANALYTICAL RESULTS

Prepared by:

Prepared for:

Eurofins Lancaster Laboratories Environmental 2425 New Holland Pike Lancaster, PA 17601 Phase Separation Science 6630 Baltimore Nat'l Pike Baltimore MD 21228

Report Date: September 22, 2016

Project: W.O. No.: 16090912

Submittal Date: 09/12/2016 Group Number: 1707100 PO Number: 16090912

 Client Sample Description
 (LL) #

 16090912-004 M1Hpt-16 (1-2) Solid
 8581397

 16090912-013 M1Hpt-20 (1.5-2.5) Solid
 8581398

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Regulatory agencies do not accredit laboratories for all methods, analytes, and matrices. Our current scopes of accreditation can be viewed at http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/. To request copies of prior scopes of accreditation, contact your project manager.

Electronic Copy To Phase Separation Science

Attn: Report ATT:

Respectfully Submitted,

Project Manager

(717) 556-7236



Analysis Report

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Sample Description: 16090912-004 M1Hpt-16 (1-2) Solid

LL Sample # SW 8581397 LL Group # 1707100 Account # 09703

Project Name: W.O. No.: 16090912

Collected: 09/08/2016 08:00

Phase Separation Science 6630 Baltimore Nat'l Pike

Baltimore MD 21228

Submitted: 09/12/2016 16:00 Reported: 09/22/2016 09:17

CAT No.	Analysis Name			CAS Nu	umber	Dry Result	Dry Method Detection Limit	Dilution Factor
Wet C	hemistry	SM	2540	G-1997		%	%	
00111	Moisture		_	n.a.		14.3	0.50	1

Moisture represents the loss in weight of the sample after oven drying at $103\,$ - $\,105\,$ degrees Celsius. The moisture result reported is on an



Analysis Report

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Sample Description: 16090912-004 M1Hpt-16 (1-2) Solid

16090912

LL Sample # SW 8581397 LL Group # 1707100 Account # 09703

Project Name: W.O. No.: 16090912

Collected: 09/08/2016 08:00

Phase Separation Science 6630 Baltimore Nat'l Pike

Baltimore MD 21228

Submitted: 09/12/2016 16:00 Reported: 09/22/2016 09:17

CAT Dry Dry Dilution Analysis Name CAS Number Result EDL Factor

Dioxins/Furans SW-846 8290A Feb 2007 ng/kg ng/kg

Rev 1

12937 2378-TCDD 1746-01-6 0.115 J 0.0745 1

Labeled Compounds %Rec Windows
13C12-2378-TCDD 95 40 - 135

Dioxins/Furans Data Qualifiers:

B Detected in Method Blank

U Undetected

J Estimated concentration between Estimated Detection Limit and Minimum Reporting Level

E Exceeds calibration range

C Confirmed quantitation on secondary GC column

Q EMPC - Estimated Maximum Possible Concentration

F Interference is present

S Saturation of detection signal



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: 16090912-004 M1Hpt-16 (1-2) Solid

16090912

LL Sample # SW 8581397 LL Group # 1707100 Account # 09703

Project Name: W.O. No.: 16090912

Collected: 09/08/2016 08:00

Phase Separation Science 6630 Baltimore Nat'l Pike

Submitted: 09/12/2016 16:00 Reported: 09/22/2016 09:17

Baltimore MD 21228

Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
12937	Dioxins/Furans in Solids-8290	SW-846 8290A Feb 2007 Rev 1	1	16259006	09/19/2016 17:56	Michael A Ziegler	1
11030	Dioxins/Furans in Solids - Sox	SW-846 8290A Feb 2007 Rev 1	1	16259006	09/15/2016 16:20	Alex L Barton	1
00111	Moisture	SM 2540 G-1997	1	16264820007A	09/20/2016 23:36	Scott W Freisher	1



Analysis Report

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Sample Description: 16090912-013 M1Hpt-20 (1.5-2.5) Solid

LL Sample # SW 8581398 LL Group # 1707100 Account # 09703

Project Name: W.O. No.: 16090912

Collected: 09/08/2016 13:30

Phase Separation Science 6630 Baltimore Nat'l Pike

Baltimore MD 21228

Submitted: 09/12/2016 16:00

Reported: 09/22/2016 09:17

CAT No. Analysis Name		CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
Wet Chemistry	SM 2540 G	-1997	8	%	
00111 Moisture		n.a.	14.6	0.50	1

Moisture represents the loss in weight of the sample after oven drying at $103\,$ - $\,105\,$ degrees Celsius. The moisture result reported is on an as-received basis.



Analysis Report

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Sample Description: 16090912-013 M1Hpt-20 (1.5-2.5) Solid

16090912

LL Sample # SW 8581398 LL Group # 1707100 Account # 09703

Project Name: W.O. No.: 16090912

Collected: 09/08/2016 13:30

Phase Separation Science 6630 Baltimore Nat'l Pike

ng/kg

Baltimore MD 21228

Submitted: 09/12/2016 16:00 Reported: 09/22/2016 09:17

CAT No. Analysis Name CAS Number Result EDL Dry Dry Dry Factor

Dioxins/Furans SW-846 8290A Feb 2007 ng/kg

Rev 1

12937 2378-TCDD 1746-01-6 0.691 J 0.0987 1

Dioxins/Furans Data Qualifiers:

B Detected in Method Blank

U Undetected

J Estimated concentration between Estimated Detection Limit and Minimum Reporting Level

E Exceeds calibration range

C Confirmed quantitation on secondary GC column

Q EMPC - Estimated Maximum Possible Concentration

F Interference is present

S Saturation of detection signal



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: 16090912-013 M1Hpt-20 (1.5-2.5) Solid

16090912

LL Sample # SW 8581398 LL Group # 1707100 Account # 09703

Project Name: W.O. No.: 16090912

Collected: 09/08/2016 13:30

Phase Separation Science 6630 Baltimore Nat'l Pike Baltimore MD 21228

Submitted: 09/12/2016 16:00

Reported: 09/22/2016 09:17

Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
12937	Dioxins/Furans in Solids-8290	SW-846 8290A Feb 2007 Rev 1	1	16259006	09/19/2016 18:53	Michael A Ziegler	1
11030	Dioxins/Furans in Solids - Sox	SW-846 8290A Feb 2007 Rev 1	1	16259006	09/15/2016 16:20	Alex L Barton	1
00111	Moisture	SM 2540 G-1997	1	16264820007A	09/20/2016 23:36	Scott W Freisher	1



Analysis Report

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Quality Control Summary

Client Name: Phase Separation Science Group Number: 1707100

Reported: 09/22/2016 09:17

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Method Blank

Analysis Name Result EDL $ng/kg \qquad \qquad ng/kg \\$

Batch number: 16259006 Sample number(s): 8581397-8581398

2378-TCDD N.D. 0.0325

LCS/LCSD

Analysis Name	LCS Spike Added %	LCS Conc %	LCSD Spike Added %	LCSD Conc %	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
	•	•	•	•					
Batch number: 16264820007A	Sample numbe	r(s): 8581	397-8581398						
Moisture	89.5	89.48			100		99-101		
Analysis Name	OPR Spike	OPR	OPRD Spike	OPRD	OPR	OPRD	OPR/OPRD	RPD	RPD
	Added	Conc	Added	Conc	%REC	%REC	Limits		Max
	ng/kg	ng/kg	ng/kg	ng/kg					
Batch number: 16259006	Sample numbe	r(s): 8581	397-8581398						
2378-TCDD	20	19.63			98		67-158		

Laboratory Duplicate

Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	BKG Conc	DUP Conc	DUP RPD	DUP RPD Max
Batch number: 16264820007A	Sample number(s):	8581397-8581398 BKG	: P577797	
Moisture	15.09	14.37	5	5

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: Dioxins/Furans in Solids-8290

Batch number: 16259006

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ / MRL.
- (2) The unspiked result was more than four times the spike added.

P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.



Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Quality Control Summary

Client Name: Phase Separation Science Group Number: 1707100

Reported: 09/22/2016 09:17

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

13C12-2378-TCDD

	10012 2010 1000	
8581397	95	
8581398	81	
Blank	86	
OPR	83	
Limits:	40-135	

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

^{*-} Outside of specification

⁽¹⁾ The result for one or both determinations was less than five times the LOQ / MRL.

⁽²⁾ The unspiked result was more than four times the spike added.

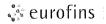


Accounts 09703 62040: 1707100

62040; 1707100 Sample #: 8581397-98

Chain of Custody Form for Subcontracted Analyses

Page 1 of 1



Sample Administration Receipt Documentation Log

Doc Log ID:

161771

Group Number(s):

Client: Phase Separation

Delivery and Receipt Information

Delivery Method:

ELLE Courier

Arrival Timestamp:

09/12/2016 16:00

Number of Packages:

1

Number of Projects:

1

State/Province of Origin:

MD

Arrival Condition Summary

Shipping Container Sealed:

No

Sample IDs on COC match Containers:

Yes

Custody Seal Present:

No

Sample Date/Times match COC:

Yes

Samples Chilled:

Yes

VOA Vial Headspace ≥ 6mm:

N/A

Paperwork Enclosed:

Yes

Total Trip Blank Qty:

0

Samples Intact:

Yes

Air Quality Samples Present:

No

Missing Samples:

No

Extra Samples:

No

Discrepancy in Container Qty on COC:

No

Unpacked by Katherine Metzger (2241) at 18:38 on 09/12/2016

Samples Chilled Details

Thermometer Types:

DT = Digital (Temp. Bottle)

IR = Infrared (Surface Temp)

All Temperatures in °C.

Cooler # Thermometer ID

DT131

Corrected Temp 8.0

Therm. Type DT

Ice Type Wet

Ice Present? Υ

Ice Container Bagged

Elevated Temp? Ν



Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL N.D.	Reporting Limit none detected	BMQL MPN	Below Minimum Quantitation Level Most Probable Number
TNTC	Too Numerous To Count	CP Units	cobalt-chloroplatinate units
IU	International Units	NTU	nephelometric turbidity units
umhos/cm	micromhos/cm	ng	nanogram(s)
С	degrees Celsius	F	degrees Fahrenheit
meq	milliequivalents	lb.	pound(s)
g	gram(s)	kg	kilogram(s)
μg	microgram(s)	mg	milligram(s)
mL	milliliter(s)	Ĺ	liter(s)
m3	cubic meter(s)	μL	microliter(s)
		pg/L	picogram/liter

< less than

> greater than

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.

ppb parts per billion

Dry weight basisResults printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Laboratory Data Qualifiers:

B - Analyte detected in the blank

C - Result confirmed by reanalysis

E - Concentration exceeds the calibration range

J (or G, I, X) - estimated value ≥ the Method Detection Limit (MDL or DL) and < the Limit of Quantitation (LOQ or RL)

P - Concentration difference between the primary and confirmation column >40%. The lower result is reported.

U - Analyte was not detected at the value indicated

V - Concentration difference between the primary and confirmation column >100%. The reporting limit is raised due to this disparity and evident interference...

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods. Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" are not performed within 15 minutes.

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Case Narrative Summary

Client Name: Icor Ltd.

Project Name: Robinson Terminal North

Work Order Number(s): 16090912

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

The analyses of chlorine, pH, dissolved oxygen, temperature and sulfite for drinking water and non-potable samples tested for compliance have a maximum holding time of 15 minutes. As such, all laboratory analyses for these analytes exceed holding times.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

All sample receipt conditions were acceptable.

Analytical:

TAL Metals

Batch: 135733

Intermedate CCV had a chromium recovery of 111%, which is above the control limits of 90-110%. Only affects sample 009, which cannot be rerun straight due to a high mercury concentration.

Organochlorine Pesticides

Batch: 135800

The recoveries of 4,4-DDT and Methoxychlor in closing CCVs were 71% and 76%(80-120%) due to sample matrix. All samples were confirmed on second column.

Laboratory control sample and/or laboratory control sample duplicate (LCS/LCSD) exceedances identified; see LCS summary form.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.



Work Order(s): 16090912

Report Prepared For: Icor Ltd., Middleburg, VA Project Name: Robinson Terminal North Project Manager: Mike Bruzzesi

Method	Client Sample Id	Analysis Type	Lab Sample Id	Analyst	Mtx	Prep Batch	Analytical Batch	Sampled	Prepared	Analyzed
ASTM D2216 05	MIHpt-16 (1-2) MIHpt-16 (4-5) MIHpt-16 (8-9) MIHpt-15 (1-2) MIHpt-15 (4-5) MIHpt-14 (1-2) MIHpt-14 (5-6) MIHpt-14 (5-6) MIHpt-14 (5-6) MIHpt-20 (1.5-2.5) MIHpt-20 (1.5-2.5)	Initial	16090912-004 16090912-005 16090912-006 16090912-007 16090912-009 16090912-010 16090912-011 16090912-011 16090912-013	1059 1059 1059 1059 1059 1059 1059 1059	× × × × × × × × ×	135699 135699 135699 135699 135699 135699 135699 135699	135699 135699 135699 135699 135699 135699 135699	09/08/2016 09/08/2016 09/08/2016 09/08/2016 09/08/2016 09/08/2016 09/08/2016 09/08/2016	09/12/2016 16:39 09/12/2016 16:39 09/12/2016 16:39 09/12/2016 16:39 09/12/2016 16:39 09/12/2016 16:39 09/12/2016 16:39 09/12/2016 16:39 09/12/2016 16:39 09/12/2016 16:39	09/12/2016 16:39 09/12/2016 16:39 09/12/2016 16:39 09/12/2016 16:39 09/12/2016 16:39 09/12/2016 16:39 09/12/2016 16:39 09/12/2016 16:39 09/12/2016 16:39 09/12/2016 16:39
EPA 1664 A	M1Hpt-08-GW (36.5-40) M1Hpt-14-GW (25-28.5) 135811-1-BKS 135811-1-BLK 135811-1-BSD	Initial Initial BKS BLK BSD	16090912-001 16090912-003 135811-1-BKS 135811-1-BLK 135811-1-BSD	1022 1022 1022 1022	8 8 8 8	135811 135811 135811 135811	135811 135811 135811 135811	09/08/2016	09/15/2016 13:14 09/15/2016 13:14 09/15/2016 13:14 09/15/2016 13:14 09/15/2016 13:14	09/15/2016 13:14 09/15/2016 13:14 09/15/2016 13:14 09/15/2016 13:14
EPA 1664 A	M1Hpt-08-GW (36.5-40) M1Hpt-14-GW (25-28.5) 135809-1-BKS 135809-1-BLK	Initial Initial BKS BLK BSD	16090912-001 16090912-003 135809-1-BKS 135809-1-BLK 135809-1-BSD	1022 1022 1022 1022 1022	8 8 8 8	135809 135809 135809 135809	135809 135809 135809 135809	09/08/2016	09/15/2016 12:59 09/15/2016 12:59 09/15/2016 12:59 09/15/2016 12:59 09/15/2016 12:59	09/15/2016 12:59 09/15/2016 12:59 09/15/2016 12:59 09/15/2016 12:59 09/15/2016 12:59
SW-846 6020 A	M1Hpt-16 (8-9) M1Hpt-14 (4-5) M1Hpt-20 (4-5) 62501-1-BKS	Initial Initial Initial BKS	16090912-006 16090912-010 16090912-014 62501-1-BKS	1033 1033 1033 1033	s s s	62501 62501 62501 62501	135733 135733 135733 135733	09/08/2016 09/08/2016 09/08/2016	09/12/2016 17:09 09/12/2016 17:09 09/12/2016 17:09 09/12/2016 17:09	09/13/2016 18:53 09/13/2016 22:55 09/13/2016 23:07 09/13/2016 16:47

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Work Order(s): 16090912

Report Prepared For: Icor Ltd., Middleburg, VA Project Name: Robinson Terminal North Project Manager: Mike Bruzzesi

Method	Client Sample Id	Analysis Type	Lab Sample Id	Analyst	Mtx	Prep Batch	Analytical Batch	Sampled	Prepared	Analyzed
SW-846 6020 A	62501-1-BLK WCTP-06 S WCTP-06 SD M1Hpt-15 (4-5)	BLK MS MSD Reanalysis	62501-1-BLK 16090910-001 S 16090910-001 SD 16090912-008	1033 1033 1033 1033	o o o o	62501 62501 62501 62501	135733 135733 135733	 09/08/2016 09/08/2016 09/08/2016	09/12/2016 17:09 09/12/2016 17:09 09/12/2016 17:09 09/12/2016 17:09	09/13/2016 16:40 09/13/2016 17:00 09/13/2016 17:07 09/14/2016 15:39
SW-846 6020 A	MIHpt-15 (1-2) MIHpt-14 (1-2) MIHpt-20 (1.5-2.5) MIHpt-14 (1-2) MIHpt-14 (1-2)	Initial Initial Initial Reanalysis Reanalysis Reanalysis	16090912-007 16090912-009 16090912-013 16090912-013 16090912-009	1033 1033 1033 1033 1033	0 0 0 0 0 0	62501 62501 62501 62501 62501	135733 135733 135733 135804 135804	09/08/2016 09/08/2016 09/08/2016 09/08/2016 09/08/2016	09/12/2016 17:09 09/12/2016 17:09 09/12/2016 17:09 09/12/2016 17:09 09/12/2016 17:09	09/13/2016 18:59 09/13/2016 22:48 09/13/2016 23:01 09/14/2016 14:45 09/14/2016 15:52
SW-846 8015 C	MIHpt-10-GW (25-28.5) MIHpt-14-GW (25-28.5) 62502-1-BKS 62502-1-BKS 62502-1-BKS 62502-1-BKS 62529-1-BKS	Initial BKS BLK BSD Initial BKS BLK BKS MSD MSD	16090912-002 16090912-003 62502-1-BLK 62502-1-BLK 62502-1-BSD 16090912-012 62529-1-BKS 62529-1-BKS 62529-1-BLK 62529-1-BSD 16090911-001 SD	1045 1045 1045 1045 1045 1045 1045 1045		62502 62502 62502 62502 62529 62529 62529 62529 62529	135830 135830 135830 135830 135866 135866 135866 135866	09/08/2016 09/08/2016 09/08/2016 09/08/2016	09/13/2016 08:19 09/13/2016 08:19 09/13/2016 08:19 09/13/2016 08:19 09/14/2016 08:49 09/14/2016 08:49 09/14/2016 08:49 09/14/2016 08:49 09/14/2016 08:49	09/15/2016 12:50 09/15/2016 13:15 09/15/2016 11:35 09/15/2016 11:10 09/16/2016 03:28 09/16/2016 00:58 09/16/2016 00:58 09/16/2016 00:33 09/16/2016 01:23 09/16/2016 01:23
SW-846 8015C	MIHpt-14 (25-26) 62513-2-BKS 62513-2-BLK MIHpt-22 (24-25) S	Initial BKS BLK MS	16090912-012 62513-2-BKS 62513-2-BLK 16090921-009 S	1035 1035 1035 1035	s s s s	62513 62513 62513 62513	135716 135716 135716 135716	09/08/2016	09/12/2016 21:27 09/12/2016 21:27 09/12/2016 21:27 09/12/2016 21:27	09/13/2016 01:29 09/12/2016 23:58 09/12/2016 23:28 09/13/2016 07:04

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Work Order(s): 16090912

Report Prepared For: Icor Ltd., Middleburg, VA Project Name: Robinson Terminal North Project Manager: Mike Bruzzesi

SW-846 8015C										
	M1Hpt-22 (24-25) SD	MSD	16090921-009 SD	1035	∞	62513	135716	09/09/2016	09/12/2016 21:27	09/13/2016 07:34
M 35	M1Hpt-10-GW (25-	Initial	16090912-002	1035	8	62576	135835	09/08/2016	09/15/2016 09:18	09/15/2016 12:28
5. N	M1Hpt-14-GW (25- 28.5)	Initial	16090912-003	1035	≽	62576	135835	09/08/2016	09/15/2016 09:18	09/15/2016 12:54
79	62576-2-BKS	BKS	62576-2-BKS	1035	W	62576	135835	!	09/15/2016 09:18	09/15/2016 11:37
79	62576-2-BLK	BLK	62576-2-BLK	1035	W	62576	135835		09/15/2016 09:18	09/15/2016 11:12
M 28	M1Hpt-14-GW (25-28.5) S	MS	16090912-003 S	1035	≽	62576	135835	09/08/2016	09/15/2016 09:18	09/15/2016 14:36
2, Z	M1Hpt-14-GW (25- 28.5) SD	MSD	16090912-003 SD	1035	≽	62576	135835	09/08/2016	09/15/2016 09:18	09/15/2016 15:01
SW-846 8081 B M	M1Hpt-16 (1-2)	Initial	16090912-004	1029	S	62498	135800	09/08/2016	09/12/2016 15:29	09/14/2016 20:40
M	M1Hpt-16 (4-5)	Initial	16090912-005	1029	S	62498	135800	09/08/2016	09/12/2016 15:29	09/14/2016 16:56
M	M1Hpt-14 (1-2)	Initial	16090912-009	1029	S	62498	135800	09/08/2016	09/12/2016 15:29	09/14/2016 21:07
M	M1Hpt-20 (1.5-2.5)	Initial	16090912-013	1029	S	62498	135800	09/08/2016	09/12/2016 15:29	09/14/2016 21:35
79	62498-1-BKS	BKS	62498-1-BKS	1029	S	62498	135800		09/12/2016 15:29	09/14/2016 22:31
79	62498-1-BLK	BLK	62498-1-BLK	1029	S	62498	135800		09/12/2016 15:29	09/14/2016 12:43
79	62498-1-BSD	BSD	62498-1-BSD	1029	S	62498	135800		09/12/2016 15:29	09/14/2016 22:03
M	M1Hpt-16 (4-5) S	MS	16090912-005 S	1029	S	62498	135800	09/08/2016	09/12/2016 15:29	09/14/2016 14:08
M	M1Hpt-16 (4-5) SD	MSD	16090912-005 SD	1029	S	62498	135800	09/08/2016	09/12/2016 15:29	09/14/2016 15:04
SW-846 8082 A M	M1Hpt-16 (1-2)	Initial	16090912-004	1029	S	62499	135705	09/08/2016	09/12/2016 15:33	09/12/2016 18:09
M	M1Hpt-16 (4-5)	Initial	16090912-005	1029	S	62499	135705	09/08/2016	09/12/2016 15:33	09/12/2016 18:38
M	M1Hpt-14 (1-2)	Initial	16090912-009	1029	S	62499	135705	09/08/2016	09/12/2016 15:33	09/12/2016 18:38
M	M1Hpt-20 (1.5-2.5)	Initial	16090912-013	1029	S	62499	135705	09/08/2016	09/12/2016 15:33	09/12/2016 19:07
79	62499-1-BKS	BKS	62499-1-BKS	1029	S	62499	135705		09/12/2016 15:33	09/12/2016 16:42
79	62499-1-BLK	BLK	62499-1-BLK	1029	S	62499	135705		09/12/2016 15:33	09/12/2016 16:13
79	62499-1-BSD	BSD	62499-1-BSD	1029	S	62499	135705		09/12/2016 15:33	09/12/2016 17:11
M	M1Hpt-16 (4-5) S	MS	16090912-005 S	1029	S	62499	135705	09/08/2016	09/12/2016 15:33	09/12/2016 17:40
M	M1Hpt-16 (4-5) SD	MSD	16090912-005 SD	1029	S	62499	135705	09/08/2016	09/12/2016 15:33	09/12/2016 18:09

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Work Order(s): 16090912

Report Prepared For: Icor Ltd., Middleburg, VA Project Name: Robinson Terminal North Project Manager: Mike Bruzzesi

Method	Client Sample Id	Analysis Type	Lab Sample Id	Analyst	Mtx	Prep Batch	Analytical Batch	Sampled	Prepared	Analyzed
SW-846 8151 A	M1Hpt-16 (1-2)	Initial	16090912-004	1029	S	62477	135724	09/08/2016	09/12/2016 09:33	09/13/2016 21:08
	M1Hpt-16 (4-5)	Initial	16090912-005	1029	S	62477	135724	09/08/2016	09/12/2016 09:33	09/13/2016 21:41
	M1Hpt-14 (1-2)	Initial	16090912-009	1029	S	62477	135724	09/08/2016	09/12/2016 09:33	09/13/2016 22:13
	M1Hpt-20 (1.5-2.5)	Initial	16090912-013	1029	S	62477	135724	09/08/2016	09/12/2016 09:33	09/13/2016 22:46
	62477-1-BKS	BKS	62477-1-BKS	1029	S	62477	135724		09/12/2016 09:33	09/13/2016 10:23
	62477-1-BLK	BLK	62477-1-BLK	1029	S	62477	135724		09/12/2016 09:33	09/13/2016 09:50
	62477-1-BSD	BSD	62477-1-BSD	1029	S	62477	135724		09/12/2016 09:33	09/13/2016 10:55
	1614-02 S	MS	16090903-001 S	1029	S	62477	135724	09/08/2016	09/12/2016 09:33	09/13/2016 11:28
	1614-02 SD	MSD	16090903-001 SD	1029	S	62477	135724	09/08/2016	09/12/2016 09:33	09/13/2016 12:00
SW-846 8260 B	M1Hpt-10-GW (25-	Initial	16090912-002	1011	≽	62544	135761	09/08/2016	09/13/2016 13:20	09/13/2016 22:32
	26.2) M1Hpt-14-GW (25- 28.5)	Initial	16090912-003	1011	M	62544	135761	09/08/2016	09/13/2016 13:20	09/13/2016 22:53
	62544-1-BKS	BKS	62544-1-BKS	1011	W	62544	135761	-	09/13/2016 13:20	09/13/2016 14:13
	62544-1-BLK	BLK	62544-1-BLK	1011	W	62544	135761		09/13/2016 13:20	09/13/2016 14:55
	GP-4-Water S	MS	16090822-005 S	1011	W	62544	135761	09/08/2016	09/13/2016 13:20	09/13/2016 15:38
	GP-4-Water SD	MSD	16090822-005 SD	1011	W	62544	135761	09/08/2016	09/13/2016 13:20	09/13/2016 15:59
	M1Hpt-14 (5-6)	Initial	16090912-011	1011	S	62583	135847	09/08/2016	09/15/2016 10:59	09/15/2016 19:37
	M1Hpt-14 (25-26)	Initial	16090912-012	1011	S	62583	135847	09/08/2016	09/15/2016 10:59	09/15/2016 20:16
	62583-1-BKS	BKS	62583-1-BKS	1011	S	62583	135847		09/15/2016 10:59	09/15/2016 12:58
	62583-1-BLK	BLK	62583-1-BLK	1011	S	62583	135847		09/15/2016 10:59	09/15/2016 13:38
	WCTP-12 S	MS	16090910-007 S	1011	S	62583	135847	09/08/2016	09/15/2016 10:59	09/15/2016 14:58
	WCTP-12 SD	MSD	16090910-007 SD	1011	S	62583	135847	09/08/2016	09/15/2016 10:59	09/15/2016 15:38
SW-846 8270 C	M1Hpt-14 (25-26)	Initial	16090912-012	1055	S	62476	135707	09/08/2016	09/12/2016 08:41	09/12/2016 16:17
	62476-1-BKS	BKS	62476-1-BKS	1055	S	62476	135707		09/12/2016 08:41	09/12/2016 13:29
	62476-1-BLK	BLK	62476-1-BLK	1055	S	62476	135707		09/12/2016 08:41	09/12/2016 13:00
	62476-1-BSD	BSD	62476-1-BSD	1055	S	62476	135707		09/12/2016 08:41	09/12/2016 13:57
	1614-02 S	MS	16090903-001 S	1055	S	62476	135707	09/08/2016	09/12/2016 08:41	09/12/2016 14:25
	1614-02 SD	MSD	16090903-001 SD	1055	S	62476	135707	09/08/2016	09/12/2016 08:41	09/12/2016 14:53

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Work Order(s): 16090912 Report Prepared For: Icor Ltd., Middleburg, VA

ect Name: Robinson Terminal North	Manager: Mike Bruzzesi
Project N	Project Mana

Method	Client Sample Id Analysis Type Lab Sample Id Analyst Mtx Prep Batch Analytical Batch Sampled	Analysis Type	Lab Sample Id	Analyst	Mtx	Prep Batch	Analytical Batch	Sampled	Prepared	Analyzed
SW-846 8270 C	M1Hpt-14-GW (25-	Initial	16090912-003	1055	8	62510	135757	09/08/2016	09/08/2016 09/13/2016 10:20	09/14/2016 06:20
	62510-1-BKS	BKS	62510-1-BKS	1055	W	62510	135757		09/13/2016 10:20	09/13/2016 23:39
	62510-1-BLK	BLK	62510-1-BLK	1055	M	62510	135757		09/13/2016 10:20	09/13/2016 23:11
	62510-1-BSD	BSD	62510-1-BSD	1055	W	62510	135757		09/13/2016 10:20	09/14/2016 00:07

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Analytical Method Seq Number: PSS Sample ID: Surrogate o-Terphenyl	: SW-846 8015 C 135830 16090912-002	%Rec 79	Matrix: Flag	Ground Water Limits 46-111	Prep Method Date Prep Units	
Analytical Method Seq Number: PSS Sample ID: Surrogate 4-Bromofluorobenz Dibromofluorometh	135761 16090912-002 ene	%Rec 100 101	Matrix: Flag	Ground Water Limits 86-111 91-119	Prep Method Date Prep Units %	Analysis Date 09/13/16 22:32 09/13/16 22:32
Analytical Method Seq Number: PSS Sample ID: Surrogate a,a,a-Trifluorotolue	135835 16090912-002	105 %Rec 72	Matrix: Flag	90-117 Ground Water Limits 55-114	% Prep Method Date Prep Units %	
Analytical Method Seq Number: PSS Sample ID: Surrogate 2-Fluorobiphenyl 2-Fluorophenol Nitrobenzene-d5	: SW-846 8270 C 135757 16090912-003	%Rec 71 68 72	Matrix: Flag	Ground Water Limits 35-107 32-106 34-123	Prep Method Date Prep Units % %	
Phenol-d6 Terphenyl-D14 2,4,6-Tribromopher Analytical Method Seq Number: PSS Sample ID: Surrogate		70 86 80 %Rec	Matrix: Flag	36-111 43-143 26-122 Ground Water	% % Prep Method Date Prep Units	: 09/13/2016 Analysis Date
o-Terphenyl		85		46-111	%	09/15/16 13:

				1 Ollimai 1 Torul		
Analytical Method Seq Number: PSS Sample ID:	: SW-846 8260 B 135761 16090912-003		Matrix:	Ground Water	Prep Method Date Prep	
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
4-Bromofluorobenz Dibromofluorometh Toluene-D8		104 103 104		86-111 91-119 90-117	% % %	09/13/16 22:53 09/13/16 22:53 09/13/16 22:53
Analytical Method Seq Number: PSS Sample ID:	: SW-846 8015C 135835 16090912-003		Matrix:	Ground Water	Prep Method Date Prep	
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
a,a,a-Trifluorotolue	ne	70		55-114	%	09/15/16 12:54
Analytical Method Seq Number: PSS Sample ID:	: SW-846 8082 A 135705 16090912-004		Matrix:	Soil	Prep Method Date Prep	
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
Decachlorobipheny Tetrachloro-m-xyler		99 87		61-150 42-142	% %	09/12/16 18:09 09/12/16 18:09
Analytical Method Seq Number: PSS Sample ID:	: SW-846 8151 A 135724 16090912-004		Matrix:	Soil	Prep Method Date Prep	
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
2,4-Dichlorophenyla	acetic Acid	108		61-144	%	09/13/16 21:08
Analytical Method Seq Number: PSS Sample ID:	: SW-846 8081 B 135800 16090912-004		Matrix:	Soil	Prep Method Date Prep	
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
Decachlorobipheny Tetrachloro-m-xyler		132 116		23-165 31-145	% %	09/14/16 20:40 09/14/16 20:40

		Nobilison			
Analytical Method: SW-846 8082 A Seq Number: 135705 PSS Sample ID: 16090912-005		Matrix:	Soil	Prep Method: Date Prep:	
Surrogate	%Rec	Flag	Limits	Units	Analysis Date
Decachlorobiphenyl Tetrachloro-m-xylene	113 97		61-150 42-142	% %	09/12/16 18:38 09/12/16 18:38
Analytical Method: SW-846 8151 A Seq Number: 135724 PSS Sample ID: 16090912-005		Matrix:	Soil	Prep Method: Date Prep:	
Surrogate	%Rec	Flag	Limits	Units	Analysis Date
2,4-Dichlorophenylacetic Acid	106		61-144	%	09/13/16 21:41
Analytical Method: SW-846 8081 B Seq Number: 135800		Matrix:	Soil	Prep Method: Date Prep:	
PSS Sample ID: 16090912-005					
Surrogate 1D: 16090912-005	%Rec	Flag	Limits	Units	Analysis Date
·	% Rec 105 113	Flag	Limits 23-165 31-145	Units % %	
Surrogate Decachlorobiphenyl	105	Flag Matrix:	23-165 31-145	%	Date 09/14/16 16:56 09/14/16 16:56 SW3550C
Surrogate Decachlorobiphenyl Tetrachloro-m-xylene Analytical Method: SW-846 8082 A Seq Number: 135705	105	•	23-165 31-145	% % Prep Method:	Date 09/14/16 16:56 09/14/16 16:56 SW3550C 09/12/2016 Analysis
Surrogate Decachlorobiphenyl Tetrachloro-m-xylene Analytical Method: SW-846 8082 A Seq Number: 135705 PSS Sample ID: 16090912-009	105 113	Matrix:	23-165 31-145 Soil	% % Prep Method: Date Prep:	Date 09/14/16 16:56 09/14/16 16:56 SW3550C 09/12/2016
Surrogate Decachlorobiphenyl Tetrachloro-m-xylene Analytical Method: SW-846 8082 A Seq Number: 135705 PSS Sample ID: 16090912-009 Surrogate Decachlorobiphenyl	105 113 %Rec 100	Matrix:	23-165 31-145 Soil Limits 61-150 42-142	% % Prep Method: Date Prep: Units %	Date 09/14/16 16:56 09/14/16 16:56 SW3550C 09/12/2016 Analysis Date 09/12/16 18:38 09/12/16 18:38
Surrogate Decachlorobiphenyl Tetrachloro-m-xylene Analytical Method: SW-846 8082 A Seq Number: 135705 PSS Sample ID: 16090912-009 Surrogate Decachlorobiphenyl Tetrachloro-m-xylene Analytical Method: SW-846 8151 A Seq Number: 135724	105 113 %Rec 100	Matrix: Flag	23-165 31-145 Soil Limits 61-150 42-142	% % Prep Method: Date Prep: Units % % %	Date 09/14/16 16:56 09/14/16 16:56 SW3550C 09/12/2016 Analysis Date 09/12/16 18:38 09/12/16 18:38

			KODIIISOII	I GIIIIII	nai North		
Analytical Method	: SW-846 8081 B					Prep Method	: SW3550C
Seq Number:	135800		Matrix:	Soil		Date Prep	
			iviati ix.	3011		Date Flep	. 09/12/2010
PSS Sample ID:	16090912-009						
Surrogate		%Rec	Flag		Limits	Units	Analysis Date
Decachlorobipheny	d .	94			23-165	%	09/14/16 21:07
Tetrachloro-m-xyle		94			31-145	%	09/14/16 21:07
readoniere in Ayle		0.4			01 140	70	00/14/10 21:07
Analytical Method						Prep Method	
Seq Number:	135847		Matrix:	Soil		Date Prep	: 09/15/2016
PSS Sample ID:	16090912-011						
, , , , , , , , , , , , , , , , , , ,							
Surrogate		%Rec	Flag		Limits	Units	Analysis Date
4-Bromofluorobenz	ene	119			82-126	%	09/15/16 19:37
Dibromofluorometh	ane	104			92-113	%	09/15/16 19:37
Toluene-D8		99			94-105	%	09/15/16 19:37
Analytical Method						Prep Method	: SW3550C
Seq Number:	135707		Matrix:	Soil		Date Prep	: 09/12/2016
PSS Sample ID:	16090912-012						
Surrogate		%Rec	Flag		Limits	Units	Analysis Date
2-Fluorobiphenyl		87			32-107	%	09/12/16 16:17
2-Fluorophenol		86			34-113	%	09/12/16 16:17
Nitrobenzene-d5		91			35-123	%	09/12/16 16:17
Phenol-d6		87			34-120	%	09/12/16 16:17
Terphenyl-D14		107			46-154	%	09/12/16 16:17
					31-113		09/12/16 16:17
2,4,6-Tribromophe	noi	83			31-113	%	09/12/16 16:17
Analytical Method	: SW-846 8015 C					Prep Method	: SW3550C
Seg Number:	135866		Matrix:	Soil		Date Prep	
PSS Sample ID:	16090912-012						
1 00 Gample ID.	10090912-012						
Surrogate		%Rec	Flag		Limits	Units	Analysis Date
o-Terphenyl		83			34-133	%	09/16/16 03:28
Analytical Method	: SW-846 8015C					Prep Method	: SW5030
Seq Number:	135716		Matrix:	Soil		Date Prep	
PSS Sample ID:	16090912-012					2401100	
i 33 Sailipie ID.	10030312-012						
Surrogate		%Rec	Flag		Limits	Units	Analysis Date
a,a,a-Trifluorotolue	ne	93			50-122	%	09/13/16 01:29

PHASE SEPARATION SCIENCE, INC.

QC Summary 16090912

Icor Ltd. Robinson Terminal North

Analytical Method	: SW-846 8260 B			Prep Method:	SW5035
Seq Number:	135847	Matrix:	Soil	Date Prep:	09/15/2016
PSS Sample ID:	16090912-012				

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	111		82-126	%	09/15/16 20:16
Dibromofluoromethane	102		92-113	%	09/15/16 20:16
Toluene-D8	98		94-105	%	09/15/16 20:16

Analytical Method: SW-846 8082 A

Seq Number: 135705 Matrix: Soil Date Prep: 09/12/2016

PSS Sample ID: 16090912-013

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
Decachlorobiphenyl	102		61-150	%	09/12/16 19:07
Tetrachloro-m-xylene	82		42-142	%	09/12/16 19:07

Analytical Method: SW-846 8151 A Prep Method: SW8151A PREP

Seq Number: 135724 Matrix: Soil Date Prep: 09/12/2016

PSS Sample ID: 16090912-013

Surrogate %Rec Flag Limits Units Analysis Date
2,4-Dichlorophenylacetic Acid 120 61-144 % 09/13/16 22:46

Analytical Method: SW-846 8081 BPrep Method:SW3550CSeq Number:135800Matrix:SoilDate Prep:09/12/2016

PSS Sample ID: 16090912-013

%Rec Flag Limits Units **Analysis** Surrogate Date Decachlorobiphenyl 105 23-165 % 09/14/16 21:35 Tetrachloro-m-xylene 106 31-145 % 09/14/16 21:35

F = RPD exceeded the laboratory control limits

X = Recovery of MS, MSD or both outside of QC Criteria

H= Recovery of BS,BSD or both exceeded the laboratory control limits

L = Recovery of BS,BSD or both below the laboratory control limits

QC Summary 16090912

Icor Ltd. Robinson Terminal North

Analytical Method: EPA 1664 A

Seq Number: 135809 Matrix: Water

LCSD Sample Id: 135809-1-BSD LCS Sample Id: 135809-1-BKS MB Sample Id: 135809-1-BLK

RPD MB LCS LCS %RPD Units **Spike** LCSD LCSD Limits Analysis **Parameter** Flag Result Limit Date Result Amount %Rec %Rec Result **TPH** <2.000 20.00 15.30 16.20 81 64-132 28 mg/L 09/15/16 12:59

Analytical Method: EPA 1664 A

Seq Number: 135811 Matrix: Water

LCS Sample Id: 135811-1-BKS LCSD Sample Id: 135811-1-BSD MB Sample Id: 135811-1-BLK

LCS LCS %RPD RPD Units MB **Spike** LCSD LCSD Limits Analysis **Parameter** Flag Result Amount Result %Rec Limit Date Result %Rec Oil & Grease, Total Recovered < 2.000 40.00 36.50 37.10 93 78-114 11 09/15/16 13:14 mg/L

Analytical Method: SW-846 6020 A SW3050B Prep Method: Seq Number: 135733 Date Prep: 09/12/16 Matrix: Solid

MB Sample Id:	62501-1-BLK		LCS San	nple ld:	62501-1-BKS				
Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec		Limits	Units	Analysis Date	Flag
Antimony	<2.376	19.01	19.76	104		80-120	mg/kg	09/13/16 16:47	7
Arsenic	< 0.4752	19.01	19.45	102		80-120	mg/kg	09/13/16 16:47	7
Beryllium	<2.376	19.01	17.29	91		80-120	mg/kg	09/13/16 16:47	7
Cadmium	<2.376	19.01	17.76	93		80-120	mg/kg	09/13/16 16:47	7
Chromium	<2.376	19.01	19.92	105		80-120	mg/kg	09/13/16 16:47	7
Copper	<2.376	19.01	19.25	101		80-120	mg/kg	09/13/16 16:47	7
Lead	<2.376	19.01	18.38	97		80-120	mg/kg	09/13/16 16:47	7
Mercury	< 0.09505	0.4752	0.4610	97		80-120	mg/kg	09/13/16 16:47	7
Nickel	<2.376	19.01	18.55	98		80-120	mg/kg	09/13/16 16:47	7
Selenium	<2.376	19.01	17.46	92		80-120	mg/kg	09/13/16 16:47	7
Silver	<2.376	19.01	18.14	95		80-120	mg/kg	09/13/16 16:47	7
Thallium	<1.901	19.01	15.74	83		80-120	mg/kg	09/13/16 16:47	7
Zinc	<9.505	95.05	89.44	94		80-120	mg/kg	09/13/16 16:47	7

Icor Ltd. Robinson Terminal North

: SW-846 8081 B							Pr	ep Metho	d: SW	/3550C	
135800			Matrix:	Solid				Date Pre	p: 09/	12/16	
62498-1-BLK		LCS San	nple ld:	62498-1-	BKS		LCSE) Sample	ld: 624	198-1-BSD	
MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
<3.968	19.84	19.18	97	18.68	95	58-120	3	25	ug/kg	09/14/16 22:31	
e) <3.968	19.84	18.23	92	17.88	91	57-120	2	25	ug/kg	09/14/16 22:31	
<3.968	19.84	19.34	97	18.15	92	59-118	6	25	ug/kg	09/14/16 22:31	
<3.968	19.84	21.21	107	20.46	104	52-123	4	25	ug/kg	09/14/16 22:31	
<3.968	19.84	19.10	96	18.46	94	44-130	3	25	ug/kg	09/14/16 22:31	
<3.968	19.84	18.93	95	18.42	93	59-123	3	25	ug/kg	09/14/16 22:31	
<3.968	19.84	20.08	101	19.52	99	61-119	3	25	ug/kg	09/14/16 22:31	
<3.968	19.84	20.82	105	20.18	102	61-122	3	25	ug/kg	09/14/16 22:31	
<3.968	19.84	18.81	95	18.25	93	61-123	3	25	ug/kg	09/14/16 22:31	
<3.968	19.84	17.61	89	16.48	84	49-131	7	25	ug/kg	09/14/16 22:31	
<3.968	19.84	22.43	113	22.08	112	66-118	2	25	ug/kg	09/14/16 22:31	
<3.968	19.84	19.98	101	19.35	98	60-122	3	25	ug/kg	09/14/16 22:31	
<3.968	19.84	21.01	106	19.56	99	39-133	7	25	ug/kg	09/14/16 22:31	
<3.968	19.84	20.38	103	19.70	100	44-130	3	25	ug/kg	09/14/16 22:31	
<3.968	19.84	24.03	121	22.90	116	59-118	5	25	ug/kg	09/14/16 22:31	Н
<3.968	19.84	23.59	119	21.58	109	28-134	9	25	ug/kg	09/14/16 22:31	
<3.968	19.84	21.35	108	20.31	103	51-129	5	25	ug/kg	09/14/16 22:31	
<3.968	19.84	21.59	109	19.78	100	33-135	9	25	ug/kg	09/14/16 22:31	
<3.968	19.84	25.77	130	24.43	124	54-124	5	25	ug/kg	09/14/16 22:31	Н
<3.968	19.84	22.82	115	21.82	111	58-123	4	25	ug/kg	09/14/16 22:31	
MB %Red	MB Flag					_	_	imits	Units	Analysis Date	
109		1	27		117	•	23	3-165	%	09/14/16 22:3	1
	62498-1-BLK MB Result <3.968 <3.968 <3.968 <3.968 <3.968 <3.968 <3.968 <3.968 <3.968 <3.968 <3.968 <3.968 <3.968 <3.968 <3.968 <3.968 <3.968 <3.968 <3.968 <3.968 <3.968 <3.968 <3.968 <3.968 <3.968 <3.968 <3.968 <3.968 <3.968 <3.968 <3.968 <3.968 <3.968 <3.968 <3.968 <3.968 <3.968 <3.968 <3.968 <3.968 <3.968 <3.968 <3.968 <3.968 <3.968 <3.968 <3.968 <3.968 <3.968	135800 62498-1-BLK MB Result Amount Spike Amount 43.968 19.84	135800 62498-1-BLK MB	135800	Matrix: Solid 62498-1-BLK LCS Sample Id: 62498-1-6298-1-62 MB Result Amount LCS LCS Result 43.968 19.84 19.18 97 18.68 43.968 19.84 19.18 97 18.68 43.968 19.84 19.34 97 18.15 43.968 19.84 19.34 97 18.15 43.968 19.84 19.10 96 18.46 43.968 19.84 19.10 96 18.46 43.968 19.84 20.08 101 19.52 43.968 19.84 20.82 105 20.18 43.968 19.84 17.61 89 16.48 43.968 19.84 17.61 89 16.48 43.968 19.84 22.43 113 22.08 43.968 19.84 21.01 106 19.56 43.968 19.84 24.03 121 22.90 43.968 19.84 24.03 121 22.	Matrix: Solid LCS Sample Id: 62498-1-BKS LCS Sample Id: 62498-1-BKS LCS LCS LCSD LCSD Result MRec MR	MB	Matrix Solid CS Sample Id: 62498-1-BLK LCS Sample Id: 62498-1-BKS LCS LCSD Lamits MRPD Result Amount Result MRec Result R	135800 Matrix: Solid Solid CSS CSS	Matrix: Solid Solid CSS Sample Id: 62498-1-BKS CSS C	Matrix Solid LCS Sample Id G2498-1-BLK Solid LCS Sample Id G2498-1-BSD G249

98

111

Tetrachloro-m-xylene

31-145

09/14/16 22:31

95

QC Summary 16090912

Icor Ltd. Robinson Terminal North

Analytical Method: SW-	846 8081 B					Pre	p Method	I: SW	/3550C	
Seq Number: 1358	300	Matri	x: Soil			I	Date Prep	: 09/	12/16	
Parent Sample Id: 1609	90912-005	MS Sample I	d: 1609091	2-005 S		MSD	Sample	d: 160	090912-005 SD)
Parameter	Parent Spike Result Amount			MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
alpha-BHC	<4.849 24.24	4 24.26 10	00 23.53	97	56-114	3	30	ug/kg	09/14/16 14:08	;
gamma-BHC (Lindane)	<4.849 24.24	4 24.78 10	23.86	98	55-116	4	30	ug/kg	09/14/16 14:08	,
beta-BHC	<4.849 24.24	1 25.40 10	05 24.82	102	62-111	2	30	ug/kg	09/14/16 14:08	,
delta-BHC	<4.849 24.24	4 24.39 10	01 23.75	98	52-122	3	30	ug/kg	09/14/16 14:08	;
Heptachlor	<4.849 24.24	4 24.28 10	00 23.61	97	48-127	3	30	ug/kg	09/14/16 14:08	;
Aldrin	<4.849 24.24	1 22.96	95 22.69	93	65-120	1	30	ug/kg	09/14/16 14:08	;
Heptachlor epoxide	<4.849 24.24	1 23.70 9	98 23.54	97	61-118	1	30	ug/kg	09/14/16 14:08	;
gamma-Chlordane	<4.849 24.24	4 24.37 10	01 24.83	102	56-126	2	30	ug/kg	09/14/16 14:08	;
alpha-Chlordane	<4.849 24.24	1 22.11 9	91 22.26	92	54-127	1	30	ug/kg	09/14/16 14:08	;
4,4-DDE	<4.849 24.24	1 23.44 9	97 23.94	98	52-124	2	30	ug/kg	09/14/16 14:08	,
Endosulfan I	<4.849 24.24	4 24.88 10	3 24.96	103	61-123	0	30	ug/kg	09/14/16 14:08	,
Dieldrin	<4.849 24.24	1 23.38	96 23.61	97	64-118	1	30	ug/kg	09/14/16 14:08	;
Endrin	<4.849 24.24	4 26.34 10	9 26.03	107	51-122	1	30	ug/kg	09/14/16 14:08	,
4,4-DDD	<4.849 24.24	4 26.21 10	08 27.13	112	48-119	3	30	ug/kg	09/14/16 14:08	,
Endosulfan II	<4.849 24.24	4 24.52 10	01 25.44	105	59-118	4	30	ug/kg	09/14/16 14:08	,
4,4-DDT	<4.849 24.24	1 23.93	99 25.17	103	35-148	5	30	ug/kg	09/14/16 14:08	;
Endrin aldehyde	<4.849 24.24	1 22.95	95 23.92	98	48-123	4	30	ug/kg	09/14/16 14:08	;
Methoxychlor	<4.849 24.24	1 22.68	94 23.70	97	40-137	4	30	ug/kg	09/14/16 14:08	;
Endosulfan sulfate	<4.849 24.24	1 25.78 10	06 26.97	111	60-121	5	30	ug/kg	09/14/16 14:08	,
Endrin ketone	<4.849 24.24	1 23.58	97 23.41	96	52-127	1	30	ug/kg	09/14/16 14:08	;
Surrogate		MS Result	MS Flag	MSD Result		Liı	mits	Units	Analysis Date	
Decachlorobiphenyl		97		99		23	-165	%	09/14/16 14:08	8
Tetrachloro-m-xylene		108		102		31	-145	%	09/14/16 14:08	3

 Analytical Method: SW-846 8082 A
 Prep Method: SW3550C

 Seq Number:
 135705
 Matrix: Solid
 Date Prep: 09/12/16

 MB Sample Id:
 62499-1-BLK
 LCS Sample Id: 62499-1-BKS
 LCSD Sample Id: 62499-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
PCB-1016	<0.04975	0.4975	0.4021	81	0.4006	81	60-110	0	25	mg/kg	09/12/16 16:42	
PCB-1260	<0.04975	0.4975	0.4793	96	0.4760	96	60-98	1	25	mg/kg	09/12/16 16:42	
Surrogate	MB %Rec	MB Flag		CS sult	LCS Flag	LCSI Resu			mits	Units	Analysis Date	

 Decachlorobiphenyl
 110
 109
 111
 61-150
 %
 09/12/16 16:42

 Tetrachloro-m-xylene
 99
 98
 100
 42-142
 %
 09/12/16 16:42

QC Summary 16090912

Icor Ltd. Robinson Terminal North

Analytical Method:	SW-846 8082 A		Prep Method:	SW3550C
Seq Number:	135705	Matrix: Soil	Date Prep:	09/12/16

Parent Sample Id: 16090912-005 MS Sample Id: 16090912-005 S MSD Sample Id: 16090912-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
PCB-1016	<0.06079	0.6079	0.4876	80	0.4825	80	45-130	1	30	mg/kg	09/12/16 17:40)
PCB-1260	<0.06079	0.6079	0.5953	98	0.5894	97	30-125	1	30	mg/kg	09/12/16 17:40)

Surrogate	MS Result	MS Flag	MSD Result	MSD Flag	Limits	Units	Analysis Date
Decachlorobiphenyl	111		111		61-150	%	09/12/16 17:40
Tetrachloro-m-xylene	95		96		42-142	%	09/12/16 17:40

Analytical Method: SW-846 8151 A Prep Method: SW8151A_PREP

 Seq Number:
 135724
 Matrix:
 Solid
 Date Prep:
 09/12/16

 MB Sample Id:
 62477-1-BLK
 LCS Sample Id:
 62477-1-BKS
 LCSD Sample Id:
 62477-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Dalapon	<493.6	1481	1096	74	1186	80	66-117	8	25	ug/kg	09/13/16 10:23	3
Dicamba	<19.74	59.23	66.44	112	66.50	112	73-126	0	25	ug/kg	09/13/16 10:23	}
MCPP	<19740	59230	51110	86	50840	86	51-138	1	25	ug/kg	09/13/16 10:23	}
MCPA	<19740	59230	51210	86	50770	85	70-133	1	25	ug/kg	09/13/16 10:23	}
Dichloroprop	<197.4	592.3	664.5	112	650.1	109	88-162	2	25	ug/kg	09/13/16 10:23	}
2,4-D	<197.4	592.3	668.5	113	654.7	110	66-133	2	25	ug/kg	09/13/16 10:23	3
2,4,5-TP (Silvex)	<19.74	59.23	61.11	103	58.37	98	71-126	5	25	ug/kg	09/13/16 10:23	3
2,4,5-T	<19.74	59.23	61.20	103	57.98	98	66-125	5	25	ug/kg	09/13/16 10:23	}
Dinoseb	<98.72	296.2	245.8	83	233.9	79	52-101	5	25	ug/kg	09/13/16 10:23	}
2,4-DB	<197.4	592.3	625.5	106	586.1	99	63-134	7	25	ug/kg	09/13/16 10:23	3
Surrogate	MB %Rec	MB Flag	· -	.CS sult	LCS Flag	LCS Resu			mits	Units	Analysis Date	
2,4-Dichlorophenylacetic Acid	97		9	98		104	ļ	61	-144	%	09/13/16 10:23	3

 Analytical Method: SW-846 8015 C
 Prep Method: SW3510C

 Seq Number:
 135830
 Matrix: Water
 Date Prep: 09/13/16

 MB Sample Id:
 62502-1-BLK
 LCS Sample Id: 62502-1-BKS
 LCSD Sample Id: 62502-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
TPH-DRO (Diesel Range Organics)	<0.1000	1.000	0.5394	54	0.7449	74	41-123	32	20	mg/L	09/15/16 11:35	F

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units	Analysis Date
o-Terphenyl	80		68		71		46-111	%	09/15/16 11:35

QC Summary 16090912

Icor Ltd. Robinson Terminal North

Analytical Method:	: SW-846 8015 C			Prep Method:	SW3550C
Seq Number:	135866	Matrix:	Solid	Date Prep:	09/14/16
MDO	00500 4 DLI/	LCC Cample Ide	COEOO 4 DICC	LCCD Comple Ide	60E00 4 DCD

82

86

o-Terphenyl

LCSD Sample Id: 62529-1-BSD MB Sample Id: 62529-1-BLK LCS Sample Id: 62529-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
TPH-DRO (Diesel Range Organics)	<10.11	33.70	28.99	86	34.10	102	54-123	16	25	mg/kg	09/16/16 00:58	
Surrogate	MB %Rec	MB Flag			LCS Flag	LCS Resu			mits	Units	Analysis Date	

34-133

09/16/16 00:58

Result 96

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Version 1.001

QC Summary 16090912

Icor Ltd. Robinson Terminal North

 Analytical Method: SW-846 8270 C
 Prep Method: SW3550C

 Seq Number:
 135707
 Matrix: Solid
 Date Prep: 09/12/16

 MB Sample Id:
 62476-1-BLK
 LCS Sample Id: 62476-1-BKS
 LCSD Sample Id: 62476-1-BSD

MB Sample Id: 62476-1-BLK LCS Samp				nple ld:	62476-1-	LCSD Sample Id: 62476-1-BSD						
Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Acenaphthene	<166.2	1330	1077	81	1085	82	60-116	1	25	ug/kg	09/12/16 13:29	9
Acenaphthylene	<166.2	1330	1120	84	1134	85	61-112	1	25	ug/kg	09/12/16 13:29	9
Acetophenone	<166.2	1330	1069	80	1081	81	57-114	1	25	ug/kg	09/12/16 13:29	9
Anthracene	<166.2	1330	1131	85	1138	86	66-115	1	25	ug/kg	09/12/16 13:29	9
Atrazine	<166.2	1330	1062	80	1083	81	7-109	2	25	ug/kg	09/12/16 13:29	9
Benzo(a)anthracene	<166.2	1330	1199	90	1207	91	71-113	1	25	ug/kg	09/12/16 13:29	9
Benzo(a)pyrene	<166.2	1330	1251	94	1273	96	69-118	2	25	ug/kg	09/12/16 13:29	9
Benzo(b)fluoranthene	<166.2	1330	1259	95	1216	91	65-126	3	25	ug/kg	09/12/16 13:29	9
Benzo(g,h,i)perylene	<166.2	1330	1093	82	1062	80	69-112	3	25	ug/kg	09/12/16 13:29	9
Benzo(k)fluoranthene	<166.2	1330	1208	91	1337	101	57-129	10	25	ug/kg	09/12/16 13:29	9
Biphenyl (Diphenyl)	<166.2	1330	1045	79	1048	79	62-117	0	25	ug/kg	09/12/16 13:29	9
Butyl benzyl phthalate	<166.2	1330	1432	108	1461	110	81-111	2	25	ug/kg	09/12/16 13:29	9
bis(2-chloroethoxy) me	thane <166.2	1330	1032	78	1039	78	56-119	1	25	ug/kg	09/12/16 13:29	9
bis(2-chloroethyl) ethe	r <166.2	1330	1029	77	1013	76	55-107	2	25	ug/kg	09/12/16 13:29	9
bis(2-chloroisopropyl)	ether <166.2	1330	963.8	72	956.4	72	44-103	1	25	ug/kg	09/12/16 13:29	9
bis(2-ethylhexyl) phtha	late <166.2	1330	1441	108	1457	110	84-109	1	25	ug/kg	09/12/16 13:29	Э Н
4-Bromophenylphenyl	ether <166.2	1330	1097	82	1094	82	63-125	0	25	ug/kg	09/12/16 13:29	9
Di-n-butyl phthalate	<166.2	1330	1247	94	1232	93	76-110	1	25	ug/kg	09/12/16 13:29	9
Carbazole	<166.2	1330	1178	89	1182	89	58-133	0	25	ug/kg	09/12/16 13:29	9
Caprolactam	<166.2		1128	85	1159	87	51-122	3	25	ug/kg	09/12/16 13:29	9
4-Chloro-3-methyl phe	nol <166.2		1186	89	1207	91	74-119	2	25	ug/kg	09/12/16 13:29	9
4-Chloroaniline	<166.2		992.7	75	1006	76	45-107	1	25	ug/kg	09/12/16 13:29	
2-Chloronaphthalene	<166.2		1030	77	1039	78	56-113	1	25	ug/kg	09/12/16 13:29	9
2-Chlorophenol	<166.2		1057	79	1069	80	59-113	1	25	ug/kg	09/12/16 13:29	
4-Chlorophenyl Pheny			1029	77	1050	79	62-111	2	25	ug/kg	09/12/16 13:29	
Chrysene	<166.2		1175	88	1175	88	72-114	0	25	ug/kg	09/12/16 13:29	
Dibenz(a,h)Anthracene			1290	97	1255	94	72-110	3	25	ug/kg	09/12/16 13:29	
Dibenzofuran	<166.2		1083	81	1102	83	62-118	2	25	ug/kg	09/12/16 13:29	
3,3-Dichlorobenzidine	<166.2		1513	114	1523	115	66-141	1	25	ug/kg	09/12/16 13:29	
2,4-Dichlorophenol	<166.2		1120	84	1128	85	68-118	1	25	ug/kg	09/12/16 13:29	
Diethyl phthalate	<166.2		1171	88	1190	89	61-113	2	25	ug/kg	09/12/16 13:29	
Dimethyl phthalate	<166.2		1161	87	1179	89	69-109	2	25	ug/kg	09/12/16 13:29	
2,4-Dimethylphenol	<166.2		1087	82	1087	82	57-122	0	25	ug/kg	09/12/16 13:29	
4,6-Dinitro-2-methyl ph			959.8	72	1008	76	50-134	5	25	ug/kg	09/12/16 13:29	
2,4-Dinitrophenol	<332.4		611	46	673.4	51	24-144	10	25	ug/kg	09/12/16 13:29	
2,4-Dinitrotoluene	<166.2		1112	84	1125	85	61-124	1	25	ug/kg	09/12/16 13:29	
2.6-Dinitrotoluene	<166.2	1330	1146	86	1161	87	59-124	1	25	ug/kg	09/12/16 13:29	
Fluoranthene	<166.2		1164	88	1149	86	69-119	1	25	ug/kg	09/12/16 13:29	
Fluorene	<166.2		1117	84	1129	85	65-115	1	25	ug/kg	09/12/16 13:29	
Hexachlorobenzene	<166.2		1082	81	1092	82	63-118	1	25	ug/kg	09/12/16 13:29	
Hexachlorobutadiene	<166.2		1035	78	1031	78	55-120	0	25	ug/kg	09/12/16 13:29	
Hexachlorocyclopenta			1030	77	1018	77	29-138	1	25	ug/kg	09/12/16 13:29	
Hexachloroethane	<166.2		1044	78	1047	79	54-110	0	25	ug/kg ug/kg	09/12/16 13:29	
Indeno(1,2,3-c,d)Pyrer			1060	80	1008	76	60-127	5	25	ug/kg ug/kg	09/12/16 13:29	
Isophorone	<166.2		1149	86	1152	87	57-116	0	25	ug/kg ug/kg	09/12/16 13:29	
2-Methylnaphthalene	<166.2		1094	82	1102	83	70-109	1	25 25	ug/kg ug/kg	09/12/16 13:29	
2-Methyl phenol	<166.2		1094	82	1114	84	59-118	2	25 25	ug/kg ug/kg	09/12/16 13:29	
3&4-Methylphenol	<166.2 <166.2		1068	80	1089	82	59-116	2	25 25	ug/kg ug/kg	09/12/16 13:29	
Naphthalene	<166.2 <166.2		1000	77	1009	77	59-113	1	25 25	ug/kg ug/kg	09/12/16 13:29	
2-Nitroaniline	<166.2		1020	82	1110	83	51-116	2	25 25	ug/kg ug/kg	09/12/16 13:29	
3-Nitroaniline	<166.2		1090	62 79	1084		57-111	3	25 25			
o-minoamille	\100.2	1330	1007	19	1004	02	51-111	3	20	ug/kg	09/12/16 13:29	,

Icor Ltd. Robinson Terminal North

Analytical Method	: SW-846 8270 C			Prep Method:	SW3550C
Seq Number:	135707	Matrix:	Solid	Date Prep:	09/12/16
MB Sample Id:	62476-1-BLK	LCS Sample Id:	62476-1-BKS	LCSD Sample Id:	62476-1-BSD

IVID Sample Id. 02470-		200 Campic Id. 02470-1-5110					2000 Campic Id. 02470-1-800					
Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis F Date	lag
4-Nitroaniline	<166.2	1330	1135	85	1182	89	55-125	4	25	ug/kg	09/12/16 13:29	
Nitrobenzene	<166.2	1330	989.7	74	995.7	75	53-110	1	25	ug/kg	09/12/16 13:29	
2-Nitrophenol	<166.2	1330	1131	85	1154	87	58-124	2	25	ug/kg	09/12/16 13:29	
4-Nitrophenol	<166.2	1330	1062	80	1096	82	51-116	3	25	ug/kg	09/12/16 13:29	
N-Nitrosodi-n-propyl amine	<166.2	1330	1090	82	1114	84	60-98	2	25	ug/kg	09/12/16 13:29	
N-Nitrosodiphenylamine	<166.2	1330	1136	85	1147	86	65-111	1	25	ug/kg	09/12/16 13:29	
Di-n-octyl phthalate	<166.2	1330	1364	103	1456	109	69-120	7	25	ug/kg	09/12/16 13:29	
Pentachlorophenol	<166.2	1330	1050	79	1074	81	56-124	2	25	ug/kg	09/12/16 13:29	
Phenanthrene	<166.2	1330	1100	83	1114	84	67-117	1	25	ug/kg	09/12/16 13:29	
Phenol	<166.2	1330	1034	78	1046	79	58-114	1	25	ug/kg	09/12/16 13:29	
Pyrene	<166.2	1330	1198	90	1237	93	77-111	3	25	ug/kg	09/12/16 13:29	
Pyridine	<166.2	1330	914.2	69	914.2	69	37-110	0	25	ug/kg	09/12/16 13:29	
2,4,5-Trichlorophenol	<166.2	1330	1181	89	1208	91	64-114	2	25	ug/kg	09/12/16 13:29	
2,4,6-Trichlorophenol	<166.2	1330	1131	85	1158	87	60-125	2	25	ug/kg	09/12/16 13:29	
Surrogate	MB %Rec	MB Flag			LCS Flag	LCS Resu			mits	Units	Analysis Date	
2-Fluorobiphenyl	88			85		84		32	2-107	%	09/12/16 13:29	
2-Fluorophenol	92			85		82		34	I-113	%	09/12/16 13:29	
Nitrobenzene-d5	91			88		86		35	5-123	%	09/12/16 13:29	
Phenol-d6	89		;	84		83		34	I-120	%	09/12/16 13:29	
Terphenyl-D14	108		1	03		104	ļ	46	6-154	%	09/12/16 13:29	
2,4,6-Tribromophenol	65		9	91		90		31	I-113	%	09/12/16 13:29	

QC Summary 16090912

Icor Ltd. Robinson Terminal North

 Analytical Method: SW-846 8270 C
 Prep Method: SW3510C

 Seq Number:
 135757
 Matrix: Water
 Date Prep: 09/13/16

 MB Sample Id:
 62510-1-BLK
 LCS Sample Id: 62510-1-BKS
 LCSD Sample Id: 62510-1-BSD

MB Sample Id: 62510-1-	le ld: 62510-1-BLK LCS Sample ld: 62510-1-BKS LCSD Sample ld: 62510-1-BSD											
Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Acenaphthene	<5.000	40.00	33.01	83	31.48	79	67-110	5	20	ug/L	09/13/16 23:39	9
Acenaphthylene	<5.000	40.00	34.34	86	32.80	82	69-106	5	20	ug/L	09/13/16 23:39	9
Acetophenone	<5.000	40.00	33.42	84	31.72	79	67-107	5	20	ug/L	09/13/16 23:39	9
Anthracene	<5.000	40.00	35.28	88	33.12	83	79-108	6	20	ug/L	09/13/16 23:39	9
Atrazine	<5.000	40.00	9.240	23	8.700	22	17-98	6	20	ug/L	09/13/16 23:39	9
Benzo(a)anthracene	<5.000	40.00	37.32	93	34.77	87	76-109	7	20	ug/L	09/13/16 23:39	9
Benzo(a)pyrene	<5.000	40.00	38.92	97	36.43	91	76-114	7	20	ug/L	09/13/16 23:39	9
Benzo(b)fluoranthene	<5.000	40.00	37.80	95	35.00	88	67-121	8	20	ug/L	09/13/16 23:39	9
Benzo(g,h,i)perylene	<5.000	40.00	38.65	97	37.75	94	75-107	2	20	ug/L	09/13/16 23:39	9
Benzo(k)fluoranthene	<5.000	40.00	39.03	98	33.73	84	62-132	15	20	ug/L	09/13/16 23:39	9
Biphenyl (Diphenyl)	<5.000	40.00	33.71	84	32.14	80	71-108	5	20	ug/L	09/13/16 23:39	9
Butyl benzyl phthalate	<5.000	40.00	41.63	104	34.47	86	74-117	19	20	ug/L	09/13/16 23:39	9
bis(2-chloroethoxy) methane	<5.000	40.00	31.39	78	30.42	76	69-111	3	20	ug/L	09/13/16 23:39	9
bis(2-chloroethyl) ether	<5.000	40.00	31.03	78	29.87	75	62-103	4	20	ug/L	09/13/16 23:39	9
bis(2-chloroisopropyl) ether	<5.000	40.00	29.31	73	27.87	70	50-103	5	20	ug/L	09/13/16 23:39	9
bis(2-ethylhexyl) phthalate	<5.000	40.00	42.88	107	36.30	91	78-114	17	20	ug/L	09/13/16 23:39	9
4-Bromophenylphenyl ether	<5.000	40.00	33.73	84	32.18	80	82-108	5	20	ug/L	09/13/16 23:39	9 L
Di-n-butyl phthalate	<5.000	40.00	39.42	99	36.92	92	71-115	7	20	ug/L	09/13/16 23:39	9
Carbazole	<5.000	40.00	35.07	88	33.14	83	52-134	6	20	ug/L	09/13/16 23:39	9
Caprolactam	<5.000	40.00	36.54	91	33.61	84	50-125	8	20	ug/L	09/13/16 23:39	9
4-Chloro-3-methyl phenol	<5.000	40.00	37.69	94	35.71	89	72-121	5	20	ug/L	09/13/16 23:39	9
4-Chloroaniline	<5.000	40.00	31.57	79	29.96	75	54-103	5	20	ug/L	09/13/16 23:39	9
2-Chloronaphthalene	<5.000	40.00	31.73	79	30.41	76	66-105	4	20	ug/L	09/13/16 23:39	9
2-Chlorophenol	<5.000	40.00	32.09	80	30.77	77	63-109	4	20	ug/L	09/13/16 23:39	9
4-Chlorophenyl Phenyl ether	<5.000	40.00	32.89	82	31.29	78	73-100	5	20	ug/L	09/13/16 23:39	9
Chrysene	<5.000	40.00	36.47	91	34.03	85	78-111	7	20	ug/L	09/13/16 23:39	9
Dibenz(a,h)Anthracene	<5.000	40.00	39.74	99	39.54	99	76-106	1	20	ug/L	09/13/16 23:39	9
Dibenzofuran	<5.000	40.00	33.61	84	31.97	80	70-111	5	20	ug/L	09/13/16 23:39	9
3,3-Dichlorobenzidine	<5.000	40.00	50.58	126	49.22	123	79-132	3	20	ug/L	09/13/16 23:39	9
2,4-Dichlorophenol	<5.000	40.00	34.77	87	33.41	84	65-118	4	20	ug/L	09/13/16 23:39	9
Diethyl phthalate	<5.000	40.00	36.81	92	34.62	87	60-114	6	20	ug/L	09/13/16 23:39	9
Dimethyl phthalate	<5.000	40.00	36.28	91	34.06	85	66-107	6	20	ug/L	09/13/16 23:39	9
2,4-Dimethylphenol	<5.000	40.00	33.01	83	31.42	79	60-119	5	20	ug/L	09/13/16 23:39	9
4,6-Dinitro-2-methyl phenol	<5.000	40.00	28.37	71	31.27	78	60-130	10	20	ug/L	09/13/16 23:39	9
2,4-Dinitrophenol	<10.00	40.00	18.53	46	21.26	53	36-136	14	20	ug/L	09/13/16 23:39	9
2,4-Dinitrotoluene	<5.000	40.00	34.39	86	32.55	81	70-119	5	20	ug/L	09/13/16 23:39	9
2,6-Dinitrotoluene	<5.000	40.00	35.34	88	33.10	83	68-117	7	20	ug/L	09/13/16 23:39	9
Fluoranthene	<5.000	40.00	37.43	94	35.98	90	79-112	4	20	ug/L	09/13/16 23:39	9
Fluorene	<5.000	40.00	35.16	88	33.44	84	71-109	5	20	ug/L	09/13/16 23:39	9
Hexachlorobenzene	<5.000	40.00	34.45	86	32.71	82	76-110	5	20	ug/L	09/13/16 23:39	9
Hexachlorobutadiene	<5.000	40.00	32.17	80	31.39	78	64-113	2	20	ug/L	09/13/16 23:39	9
Hexachlorocyclopentadiene	<5.000	40.00	27.75	69	31.33	78	49-124	12	20	ug/L	09/13/16 23:39	9
Hexachloroethane	<5.000	40.00	31.26	78	30.50	76	62-105	2	20	ug/L	09/13/16 23:39	9
Indeno(1,2,3-c,d)Pyrene	<5.000	40.00	36.70	92	35.67	89	69-120	3	20	ug/L	09/13/16 23:39	9
Isophorone	<5.000	40.00	35.32	88	33.84	85	68-108	4	20	ug/L	09/13/16 23:39	9
2-Methylnaphthalene	<5.000	40.00	34.55	86	32.93	82	64-117	5	20	ug/L	09/13/16 23:39	
2-Methyl phenol	<5.000	40.00	33.90	85	32.12	80	67-111	5	20	ug/L	09/13/16 23:39	
3&4-Methylphenol	<5.000	40.00	33.44	84	31.90	80	67-107	5	20	ug/L	09/13/16 23:39	9
Naphthalene	<5.000	40.00	31.68	79	30.33	76	65-103	4	20	ug/L	09/13/16 23:39	
2-Nitroaniline	<5.000	40.00	33.61	84	31.39	78	59-114	7	20	ug/L	09/13/16 23:39	
3-Nitroaniline	<5.000	40.00	33.21	83	31.11	78	60-109	7	20	ug/L	09/13/16 23:39	
										-		

Icor Ltd. Robinson Terminal North

Analytical Method Seq Number:	135757					Water	DIVO			ep Metho	ep: 09/	/3510C 13/16	
MB Sample Id:	62510-1-	BLK		LCS San	пріе іа:	62510-1-	BKS		LCSD	Sample	910: 625	510-1-BSD	
Parameter		MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
4-Nitroaniline		<5.000	40.00	35.11	88	32.86	82	51-125	7	20	ug/L	09/13/16 23:39)
Nitrobenzene		<5.000	40.00	30.34	76	28.95	72	60-107	5	20	ug/L	09/13/16 23:39)
2-Nitrophenol		<5.000	40.00	33.65	84	32.78	82	65-119	3	20	ug/L	09/13/16 23:39)
4-Nitrophenol		<5.000	40.00	35.78	89	33.85	85	46-121	6	20	ug/L	09/13/16 23:39)
N-Nitrosodi-n-propyl	amine	<5.000	40.00	33.55	84	32.07	80	60-98	5	20	ug/L	09/13/16 23:39)
N-Nitrosodiphenylam	iine	<5.000	40.00	35.08	88	32.90	82	68-106	6	20	ug/L	09/13/16 23:39)
Di-n-octyl phthalate		<5.000	40.00	41.63	104	30.03	75	69-120	32	20	ug/L	09/13/16 23:39) F
Pentachlorophenol		<5.000	40.00	33.00	83	32.09	80	63-119	3	20	ug/L	09/13/16 23:39)
Phenanthrene		<5.000	40.00	34.81	87	32.53	81	73-109	7	20	ug/L	09/13/16 23:39)
Phenol		<5.000	40.00	32.11	80	30.49	76	65-110	5	20	ug/L	09/13/16 23:39)
Pyrene		<5.000	40.00	33.79	84	27.81	70	78-111	19	20	ug/L	09/13/16 23:39) L
Pyridine		<5.000	40.00	26.81	67	25.55	64	47-105	5	20	ug/L	09/13/16 23:39)
2,4,5-Trichloropheno	l	<5.000	40.00	36.19	90	34.56	86	69-114	5	20	ug/L	09/13/16 23:39)
2,4,6-Trichloropheno	I	<5.000	40.00	33.30	83	31.50	79	68-118	6	20	ug/L	09/13/16 23:39)
										.,			
Surrogate		MB %Rec	MB Flag		CS sult	LCS Flag	LCS Resu	_		mits	Units	Analysis Date	
2-Fluorobiphenyl		76			31		75		35	-107	%	09/13/16 23:3	9
2-Fluorophenol		75			79		74		32	-106	%	09/13/16 23:3	9
Nitrobenzene-d5		79			34		79		34	-123	%	09/13/16 23:3	9
Phenol-d6		77			31		76			-111	%	09/13/16 23:3	
Terphenyl-D14		93			90		71		43	-143	%	09/13/16 23:3	9
2,4,6-Tribromopheno	ol	75		9	90		84			-122	%	09/13/16 23:3	
, ,													
Analytical Method Seq Number:	d: SW-846 135716	8015C			Matrix:	Solid				ep Metho Date Pre		/5030 12/16	
MB Sample Id:	62513-2-	BLK		LCS San	nple Id:	62513-2-	BKS						
Parameter		MB Result	Spike Amount	LCS Result	LCS %Rec			Limits			Units	Analysis Date	Flag
TPH-GRO (Gasoline Ra	ange Organic:	<100	5000	4627	93			75-123			ug/kg	09/12/16 23:58	3
Surrogate		MB %Rec	MB Flag		CS sult	LCS Flag			Li	mits	Units	Analysis Date	
a,a,a-Trifluorotoluene	е	91		1	10				50	-122	%	09/12/16 23:5	8

Analytical Method Seq Number: MB Sample Id:					Matrix:	Water 62576-2-BKS		Prep Meth Date Pr	/5030B 15/16		
Parameter		MB Result	Spike Amount	LCS Result	LCS %Rec		Limits		Units	Analysis Date	Flag
TPH-GRO (Gasoline Ra	inge Organic:	<100	5000	4707	94		74-132		ug/L	09/15/16 11:37	•
Surrogate		MB %Rec	MB Flag	_	.CS sult	LCS Flag		Limits	Units	Analysis Date	
a,a,a-Trifluorotoluene	•	71		8	81			55-114	%	09/15/16 11:3	7

Icor Ltd. **Robinson Terminal North**

Analytical Metho	d: SW-846 8015C	Prep Meth	hod: SW5030B	1
Sea Number:	135835	Matrix: Ground Water Date P	rep: 09/15/16	

MS Sample Id: 16090912-003 S MSD Sample Id: 16090912-003 SD Parent Sample Id: 16090912-003

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
TPH-GRO (Gasoline Range Organics	<100	5000	3936	79	3736	75	49-137	5	25	ua/l	09/15/16 14:36	6

Surrogate	MS Result	MS Flag	MSD Result	MSD Flag	Limits	Units	Analysis Date
a a a-Trifluorotoluene	78		76		55-114	%	09/15/16 14:36

Icor Ltd. Robinson Terminal North

Prep Method: SW5030B Analytical Method: SW-846 8260 B Seq Number: Matrix: Water Date Prep: 09/13/16

MR Sample Id 625//₁-1-BLK LCS Sample Id: 62544-1-BKS

MB Sample Id:	62544-1-BLK		LCS San	nple ld:	62544-1-BKS			
Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Analysis Date	Flag
Acetone	<10.00	50.00	51.91	104	29-149	ug/L	09/13/16 14:13	
Benzene	<1.000	50.00	52.69	105	85-123	ug/L	09/13/16 14:13	;
Bromochloromethane	<1.000	50.00	48.61	97	82-136	ug/L	09/13/16 14:13	;
Bromodichlorometha	ne <1.000	50.00	56.22	112	88-133	ug/L	09/13/16 14:13	
Bromoform	<5.000	50.00	47.41	95	80-126	ug/L	09/13/16 14:13	}
Bromomethane	<1.000	50.00	45.81	92	64-139	ug/L	09/13/16 14:13	
2-Butanone (MEK)	<10.00	50.00	46.82	94	39-135	ug/L	09/13/16 14:13	
Carbon Disulfide	<10.00	50.00	53.20	106	85-124	ug/L	09/13/16 14:13	
Carbon Tetrachloride	<1.000	50.00	48.26	97	81-138	ug/L	09/13/16 14:13	
Chlorobenzene	<1.000	50.00	51.71	103	85-120	ug/L	09/13/16 14:13	
Chloroethane	<1.000	50.00	53.93	108	75-129	ug/L	09/13/16 14:13	
Chloroform	<1.000	50.00	48.93	98	85-128	ug/L	09/13/16 14:13	;
Chloromethane	<1.000	50.00	51.22	102	60-139	ug/L	09/13/16 14:13	;
Cyclohexane	<10.00	50.00	53.23	106	55-131	ug/L	09/13/16 14:13	;
1,2-Dibromo-3-Chloro	opropane <10.00	50.00	46.16	92	69-127	ug/L	09/13/16 14:13	
Dibromochlorometha	ne <1.000	50.00	47.72	95	82-127	ug/L	09/13/16 14:13	
1,2-Dibromoethane (I	EDB) <1.000	50.00	52.40	105	82-121	ug/L	09/13/16 14:13	
1,2-Dichlorobenzene	<1.000	50.00	53.86	108	82-123	ug/L	09/13/16 14:13	
1,3-Dichlorobenzene	<1.000	50.00	52.92	106	81-123	ug/L	09/13/16 14:13	
1,4-Dichlorobenzene	<1.000	50.00	51.45	103	81-121	ug/L	09/13/16 14:13	;
Dichlorodifluorometha	ane <1.000	50.00	58.97	118	69-147	ug/L	09/13/16 14:13	;
1,1-Dichloroethane	<1.000	50.00	55.34	111	83-123	ug/L	09/13/16 14:13	;
1,2-Dichloroethane	<1.000	50.00	52.83	106	86-138	ug/L	09/13/16 14:13	
1,1-Dichloroethene	<1.000	50.00	56.34	113	85-127	ug/L	09/13/16 14:13	
cis-1,2-Dichloroethen	e <1.000	50.00	54.76	110	87-127	ug/L	09/13/16 14:13	
1,2-Dichloropropane	<1.000	50.00	53.76	108	79-125	ug/L	09/13/16 14:13	
cis-1,3-Dichloroprope	ene <1.000	50.00	50.88	102	79-131	ug/L	09/13/16 14:13	
trans-1,3-Dichloropro	pene <1.000	50.00	50.41	101	82-133	ug/L	09/13/16 14:13	}
trans-1,2-Dichloroeth	ene <1.000	50.00	52.28	105	85-125	ug/L	09/13/16 14:13	}
Ethylbenzene	<1.000	50.00	54.16	108	83-123	ug/L	09/13/16 14:13	}
2-Hexanone	<10.00	50.00	53.17	106	37-137	ug/L	09/13/16 14:13	;
Isopropylbenzene	<1.000	50.00	48.37	97	70-131	ug/L	09/13/16 14:13	
Methyl Acetate	<10.00	50.00	51.21	102	69-127	ug/L	09/13/16 14:13	
Methylcyclohexane	<10.00	50.00	55.01	110	75-129	ug/L	09/13/16 14:13	
Methylene Chloride	<1.000	50.00	53.29	107	86-124	ug/L	09/13/16 14:13	
4-Methyl-2-Pentanon	e <5.000	50.00	52.24	104	39-143	ug/L	09/13/16 14:13	;
Methyl-t-butyl ether	<1.000	50.00	45.49	91	75-134	ug/L	09/13/16 14:13	;
Naphthalene	<1.000	50.00	47.64	95	61-118	ug/L	09/13/16 14:13	}
Styrene	<1.000	50.00	47.49	95	80-120	ug/L	09/13/16 14:13	}
1,1,2,2-Tetrachloroet	hane <1.000	50.00	50.93	102	64-125	ug/L	09/13/16 14:13	
Tetrachloroethene	<1.000	50.00	54.70	109	83-138	ug/L	09/13/16 14:13	
Toluene	<1.000	50.00	54.25	109	88-126	ug/L	09/13/16 14:13	
1,2,3-Trichlorobenzer	ne <1.000	50.00	49.23	98	75-124	ug/L	09/13/16 14:13	
1,2,4-Trichlorobenzer	ne <1.000	50.00	56.36	113	77-131	ug/L	09/13/16 14:13	
1,1,1-Trichloroethane	<1.000	50.00	55.33	111	68-146	ug/L	09/13/16 14:13	
1,1,2-Trichloroethane	<1.000	50.00	54.91	110	85-124	ug/L	09/13/16 14:13	1
Trichloroethene	<1.000	50.00	54.34	109	87-127	ug/L	09/13/16 14:13	;
Trichlorofluorometha	ne <5.000	50.00	56.84	114	77-147	ug/L	09/13/16 14:13	;
1,1,2-Trichloro-1,2,2-Trit	luoroethane <1.000	50.00	57.60	115	68-135	ug/L	09/13/16 14:13	
Vinyl Chloride	<1.000	50.00	54.93	110	74-138	ug/L	09/13/16 14:13	
m,p-Xylenes	<2.000	100	94.49	94	84-124	ug/L	09/13/16 14:13	

Icor Ltd. Robinson Terminal North

Analytical Method: SW-846 8260 B Prep Method: SW5030B Seq Number: 135761 Matrix: Water Date Prep: 09/13/16

62544-1-BLK LCS Sample Id: 62544-1-BKS MB Sample Id:

Wib Campic id. 020	OTT I DEIX				020 2.					
Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec		Limits		Units	Analysis Date	Flag
o-Xylene	<1.000	50.00	47.97	96		79-126		ug/L	09/13/16 14:13	
Surrogate	MB %Rec	MB Flag	_	CS sult	LCS Flag		Limits	Units	Analysis Date	
4-Bromofluorobenzene	101		9	99			86-111	%	09/13/16 14:13	
Dibromofluoromethane	101		1	05			91-119	%	09/13/16 14:13	
Toluene-D8	103		1	04			90-117	%	09/13/16 14:13	

Icor Ltd. Robinson Terminal North

Analytical Method: SW-846 8260 B Prep Method: SW5030 Seq Number: 135847 Matrix: Solid Date Prep: 09/15/16

LCS Sample Id: 62583-1-BKS MR Sample Id 62583-1-BLK

MB Sample Id:	62583-1-BLK		LCS San	nple ld:	62583-1-BKS			
Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Analysis Date	Flag
Acetone	<20.00	60.00	74.88	125	46-127	ug/kg	09/15/16 12:58	}
Benzene	<5.000	60.00	68.60	114	70-127	ug/kg	09/15/16 12:58	3
Bromochloromethane	< 5.000	60.00	61.39	102	68-122	ug/kg	09/15/16 12:58	3
Bromodichloromethan	ne <5.000	60.00	60.43	101	68-122	ug/kg	09/15/16 12:58	3
Bromoform	<5.000	60.00	58.33	97	57-127	ug/kg	09/15/16 12:58	3
Bromomethane	<5.000	60.00	67.46	112	68-123	ug/kg	09/15/16 12:58	3
2-Butanone (MEK)	<20.00	60.00	71.97	120	41-136	ug/kg	09/15/16 12:58	3
Carbon Disulfide	<10.00	60.00	71.72	120	66-135	ug/kg	09/15/16 12:58	3
Carbon Tetrachloride	<5.000	60.00	52.99	88	64-147	ug/kg	09/15/16 12:58	3
Chlorobenzene	<5.000	60.00	66.33	111	70-121	ug/kg	09/15/16 12:58	3
Chloroethane	<5.000	60.00	71.33	119	66-142	ug/kg	09/15/16 12:58	3
Chloroform	<5.000	60.00	60.49	101	68-123	ug/kg	09/15/16 12:58	3
Chloromethane	<5.000	60.00	79.54	133	65-136	ug/kg	09/15/16 12:58	3
Cyclohexane	<20.00	60.00	70.16	117	62-138	ug/kg	09/15/16 12:58	3
1,2-Dibromo-3-Chloro	propane <40.00	60.00	58.56	98	55-122	ug/kg	09/15/16 12:58	3
Dibromochlorometha	ne <5.000	60.00	57.68	96	61-122	ug/kg	09/15/16 12:58	3
1,2-Dibromoethane (E	EDB) <5.000	60.00	62.36	104	63-119	ug/kg	09/15/16 12:58	3
1,2-Dichlorobenzene	<5.000	60.00	62.54	104	65-121	ug/kg	09/15/16 12:58	3
1,3-Dichlorobenzene	<5.000	60.00	64.50	108	69-121	ug/kg	09/15/16 12:58	3
1,4-Dichlorobenzene	<5.000	60.00	63.97	107	69-118	ug/kg	09/15/16 12:58	3
Dichlorodifluorometha	ane <5.000	60.00	57.47	96	53-162	ug/kg	09/15/16 12:58	3
1,1-Dichloroethane	<5.000	60.00	65.68	109	70-127	ug/kg	09/15/16 12:58	3
1,2-Dichloroethane	<5.000	60.00	56.17	94	68-118	ug/kg	09/15/16 12:58	3
1,1-Dichloroethene	<5.000	60.00	68.72	115	69-133	ug/kg	09/15/16 12:58	3
1,2-Dichloropropane	<5.000	60.00	71.66	119	70-122	ug/kg	09/15/16 12:58	}
cis-1,2-Dichloroethen	e <5.000	60.00	66.37	111	68-126	ug/kg	09/15/16 12:58	3
cis-1,3-Dichloroprope		60.00	63.86	106	68-121	ug/kg	09/15/16 12:58	
trans-1,2-Dichloroeth			68.07	113	70-132	ug/kg	09/15/16 12:58	
trans-1,3-Dichloropro			60.25	100	67-115	ug/kg	09/15/16 12:58	
Ethylbenzene	<5.000		67.89	113	70-125	ug/kg	09/15/16 12:58	
2-Hexanone	<20.00		73.00	122	40-121	ug/kg	09/15/16 12:58	
Isopropylbenzene	<5.000		67.13	112	68-130	ug/kg	09/15/16 12:58	
Methyl Acetate	<20.00		68.18	114	60-125	ug/kg	09/15/16 12:58	
Methylcyclohexane	<20.00		68.01	113	62-150	ug/kg	09/15/16 12:58	
Methylene Chloride	<5.000		67.92	113	67-121	ug/kg	09/15/16 12:58	
4-Methyl-2-Pentanon		60.00	67.75	113	48-117	ug/kg	09/15/16 12:58	
Methyl-t-butyl ether	<5.000		55.14	92	66-119	ug/kg	09/15/16 12:58	
Naphthalene	<5.000		59.31	99	54-115	ug/kg	09/15/16 12:58	
Styrene	<5.000		63.86	106	71-120	ug/kg	09/15/16 12:58	
1,1,2,2-Tetrachloroetl			71.81	120	59-122	ug/kg	09/15/16 12:58	
Tetrachloroethene	<5.000		60.13	100	65-145	ug/kg	09/15/16 12:58	
Toluene	<5.000		66.19	110	69-129	ug/kg	09/15/16 12:58	
1,2,3-Trichlorobenzer			56.07	93	60-114	ug/kg	09/15/16 12:58	
1,2,4-Trichlorobenzer			55.83	93	64-115	ug/kg	09/15/16 12:58	
1,1,1-Trichloroethane			52.93	88	65-139	ug/kg	09/15/16 12:58	
1,1,2-Trichloroethane			70.14	117	64-125	ug/kg	09/15/16 12:58	
Trichloroethene	<5.000		64.44	107	69-133	ug/kg 	09/15/16 12:58	
Trichlorofluoromethar			60.71	101	59-153	ug/kg	09/15/16 12:58	
1,1,2-Trichloro-1,2,2-Trif			59.34	99	62-139	ug/kg	09/15/16 12:58	
Vinyl Chloride	<5.000		85.29	142	69-142	ug/kg	09/15/16 12:58	
m,p-Xylenes	<10.00	120	136	113	71-124	ug/kg	09/15/16 12:58	5

QC Summary 16090912

Icor Ltd. Robinson Terminal North

Analytical Method: SW-846 8260 B Prep Method: SW5030 Seq Number: 135847 Matrix: Solid Date Prep: 09/15/16

MB Sample Id: 62583-1-BLK LCS Sample Id: 62583-1-BKS

MD Sample Id.	02303-1-DLN		LOC Our	iipic ia	. 02000 1 0110	•				
Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec		Limits		Units	Analysis F Date	lag
o-Xylene	<5.000	60.00	64.71	108	3	72-123		ug/kg	09/15/16 12:58	
Surrogate	MB %Red	MB Flag	_	.CS esult	LCS Flag		Limits	Units	Analysis Date	
4-Bromofluorobenzene	116		1	101			82-126	%	09/15/16 12:58	
Dibromofluoromethane	97			97			92-113	%	09/15/16 12:58	
Toluene-D8	96		1	102			94-105	%	09/15/16 12:58	

F = RPD exceeded the laboratory control limits

X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits

L = Recovery of BS,BSD or both below the laboratory control limits



SAMPLE CHAIN OF CUSTODY/AGREEMENT FORM

www.phaseonline.com

PHASE SEPARATION SCIENCE, INC.

email: info@phaseonline.com

CLIENT	*CLIENT: COK, CTD,	רדים	OFFICE LOC	1			25	レニして		100	
*PROJEC	*PROJECT MGR: 4, SLAZGE / *PHONE NO.: (703 608)	ЮНЬ* /	VENO:(R	3608	1-5269	Matrix Codes: SW=Surface Wh	Matrox Codes: SW=Surface Wifr DW=Drinking Wtr GW=Ground Wir WW=Waste Wir O=Oil	ound Wir WW=Waste	Wir 0=0il S=	Soil LeLiquid SO	S=Soil L=Liquid SOL=Solo A=Air WI=Wipe
EMAIL: 6	LAND STRATE ALCHANO.	& GAX):: ()		C SAMPLE	Used	00	4	-	20/
*PROJEC	*PROJECT NAME: RORN ON TERMINA NOTHING	ERMINA	2 ABAS	JECT NO.:		Z Z →	Method / Required /	59	80	80/9	H. 282
SITE LOC	SITE LOCATION: 500/501 N, UNION STED, NO.	W, UNK	J 5/40	NO.:		A COMP	(O)	X3 /3	3	8 8	14
SAMPLER(S):	(S): Mitheresec/	12	DW CERT NO.	NO.:		N G = GRAB	*	10/2/01/	13 23	10 8 P	19
LAB NO.	*SAMPLE IDENTIFICATION	CATION	*DATE	*TIME (SAMPLED)	MATRIX (See Codes)		0/0/	D/20/5	77	/N.	REMARKS
_	MIHPT-08-6W(36,540)9/8/16 074	5w/36.5	40/9/8	ine orus	T 6W	1 6				×	
2	M. Hpt-10-6W/25-28.5	whi-e	1 (3%	0800	80	7	メメメ		220		
3	M, Hot-14-6W (25-285)	W (25-28	(-12)	5111	600	10	XXX	*		X	
h	MIHPT-16 (1-2)	(2-	1	0000	05	3		~	x V	x x	
S	MHOT-16 (4-1	12-6		2080	20	2			x	¥	
0)	M. Hot-16 18-9	8-9		0180	50	-		×			
	M. Hot-15 C	(1-5)		0830	50			X			
8	~	(4-5)		2280	00	1		X			
6	M, Hot -14 (1-2	(27)		993T	05	7		\ \	ヘイメ	×	
010	MiHbt-14 C4-5	(4-1)	>	0460	20	> -	~	×			
ReInquished	C (1) National	9/9/16	7 p. 200	Received By:	Ø		*Requested T	800		# of Coolers: 3 Custody Seal: ABS	5:
Relinquished By: (2)	ed By: (2)	Date 9/9	Time 1310	Received	S	. {	Data Deliverables Required: COA QC SUMM CLP LIKE	Required: CLP LIKE OTHER	1	Ice Present PLES Shipping Carrier:	5 Temp: 3, 4,5%
Relinquished By. (3)	ed By _. (3)	Date	Time	Received E	₽A		Special Instructions	St.			
Relinquished By: (4)	ed By: (4)	Date	Time	Received E	By:		DW COMPLIANCE?	EDD FORMAT TYPE	TYPE		STATE RESULTS REPORTED TO:

The client (Client Name), by signing, or having client's agent sign, this "Sample Chain of Custody/Agreement Form", agrees to pay for the above requested services per the latest version of the Service Brochure or PSS-provided quotation including any and all attorney's or other reasonable fees if collection becomes necessary. * = REQUIRED



SAMPLE CHAIN OF CUSTODY/AGREEMENT FORM

www.phaseonline.com

email: info@phaseonline.com

PHASE SEPARATION SCIENCE, INC.

	こうとしてい	2110	OFFICE LOC				Ī	ってつる	レーアのてつら		PAGE	5
*PROJECT	*PROJECT MGR: 1,2 PLZZEK 1 *PHONE NO. (783) 608-5769	VOHA* 12	E NO. (2	608-5	169	x Codes: Surface Wtr	DW=Drinking	Wir GW=Ground	DW=Drinking Wir GW=Ground Wir WW=Waste Wir 0=0ii S=Soii L=Liquid S0L=Solid	Tr. 0=0il 8	Seoil LeLiquid SOL	-Solid A=Air WI=Wipe
EMAIL 5	EMAIL: LAND CTRATE BOL. COFENO.	COFAX NO		^		O SAMPLE	Section 1988		-	0	7	82
*PROJECT	*PROJECT NAME: [BLAKAN [SPLUWOL NOTTEND.	EMENOL	NORTH	ECT NO.:		N TYPE	Method Required/	-5	FI	200	3/2	140
SITE LOCAT	SITE LOCATION: 500/501 NO NUON ST. PO. NO.	JUNION	J 5, PO. N	10::		A COMP	0	08	V3)		00/	14/18
SAMPLER(S	SAMPLER(S): M, SALEZES (19:	DW CERT NO.:			N G = GRAB	*	00	200	23	280	20
LAB NO.	*SAMPLE IDENTIFICATION	z	*DATE (SAMPLED)	*TIME	MATRIX (See Codes)		9	00	P		100	/ REMARKS
11	N.1456-14 (5-6)		9/8/16	240	05	3		×				
21	MIHPT-14 (25-26)	(92-20)	-	1010	07	5	À	x x				
(3	MIHT -20 (1.5-2.5	1.5-2.1		1330	50	8			×	X	X	
<i>b</i> -1	Miltot-20 (4-5)	(4-6)	>	1835	07	>			×			
Reinquished By	BANG STATE	Date		Received By:	, i		**Req	thested TAT (Requested TAT (One TAT per COC)		# of Coolers: 3	
7	101	21/1/2	0 700	eran	4		Next Day	ay 🗆			Custody Seal: 48	
Relinquished By: (2)	BY:(2) Gang	9/9	Time (310	Received By	S	3	Data De	Data Deliverables Required:	quired: OTHER	1200	Ice Present: NE	STemp: 3,4
Relinquished By: (3)	By; (3)	Date	Time	Received By	*		Special	Special Instructions:				
Relinquished By: (4)	By: (4)	Date	Time	Received By:	λ:		DW CON YES	DW COMPLIANCE?	EDD FORMAT TYPE	YPE		STATE RESULTS REPORTED TO:

The client (Client Name), by signing, or having client's agent sign, this "Sample Chain of Custody/Agreement Form", agrees to pay for the above requested services per the latest version of the Service Brochure or PSS-provided quotation including any and all attorney's or other reasonable fees if collection becomes necessary. * = REQUIRED 6630 Baltimore National Pike • Route 40 West • Baltimore, Maryland 21228 • (410) 747-8770 • (800) 932-9047 • Fax (410) 788-8723

Page 72 of 74

Version 1.001



Phase Separation Science, Inc

Sample Receipt Checklist

Work Order # 16090912 Received By Rachel Davis

Client Name Icor Ltd. Date Received 09/09/2016 01:10:00 PM

Project Name Robinson Terminal North Delivered By Trans Time Express

Disposal Date 10/14/2016 Tracking No Not Applicable

Logged In By Rachel Davis

Shipping Container(s)

No. of Coolers

		Ice	Present
Custody Seal(s) Intact?	N/A	Temp (deg C)	3
Seal(s) Signed / Dated?	N/A	Temp Blank Present	No

Custody Seal(s) Intact?

N/A

Temp (deg C)

4

Seal(s) Signed / Dated?

N/A

Temp Blank Present

No

Custody Seal(s) Intact?

N/A

Temp (deg C)

Seal(s) Signed / Dated?

N/A

Temp Blank Present

No

Documentation

COC agrees with sample labels?

Chain of Custody

Sampler Name

Mike Bruzzesi

MD DW Cert. No.

N/A

Yes

Chain of Custody

Sample Container

Appropriate for Specified Analysis?

Intact?

Custody Seal(s) Intact? Not Applicable

Yes

Seal(s) Signed / Dated Not Applicable

Labeled and Labels Legible? Yes

Total No. of Samples Received 14 Total No. of Containers Received 43

Preservation

Total Metals	(pH<2)	N/A
Dissolved Metals, filtered within 15 minutes of collection	(pH<2)	N/A
Orthophosphorus, filtered within 15 minutes of collection		N/A
Cyanides	(pH>12)	N/A
Sulfide	(pH>9)	N/A
TOC, DOC (field filtered), COD, Phenols	(pH<2)	N/A
TOX, TKN, NH3, Total Phos	(pH<2)	N/A
VOC, BTEX (VOA Vials Rcvd Preserved)	(pH<2)	N/A
Do VOA vials have zero headspace?		N/A
624 VOC (Rcvd at least one unpreserved VOA vial)		N/A
524 VOC (Rcvd with trip blanks)	(pH<2)	N/A



Phase Separation Science, Inc

Sample Receipt Checklist

Work Order # 16090912 Received By Rachel Davis

Client Name Icor Ltd. Date Received 09/09/2016 01:10:00 PM

Project Name Robinson Terminal North Delivered By Trans Time Express

Disposal Date 10/14/2016 Tracking No Not Applicable

Logged In By Rachel Davis

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Samples Inspected/Checklist Completed By:	Laclel Daws Rachel Davis	Date: 09/09/2016
PM Review and Approval:	Simon Crisp	Date: 09/12/2016

Analytical Report for

Icor Ltd.

Certificate of Analysis No.: 16090921

Project Manager: Mike Bruzzesi

Project Name: Robinson Terminal North Project Location: 500/501 N. Union St.



September 16, 2016
Phase Separation Science, Inc.
6630 Baltimore National Pike
Baltimore, MD 21228
Phone: (410) 747-8770

Fax: (410) 788-8723

PHASE SEPARATION SCIENCE, INC.



September 16, 2016

Mike Bruzzesi Icor Ltd. PO Box 406 Middleburg, VA 20118

Reference: PSS Work Order(s) No: 16090921

Project Name: Robinson Terminal North Project Location: 500/501 N. Union St.

Dear Mike Bruzzesi:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Work Order(s) numbered **16090921**.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on October 14, 2016, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

Dan PrucnalLaboratory Manager



Sample Summary

Client Name: Icor Ltd.

Project Name: Robinson Terminal North

Work Order Number(s): 16090921

The following samples were received under chain of custody by Phase Separation Science (PSS) on 09/09/2016 at 04:20 pm

Lab Sample Id	Sample Id	Matrix	Date/Time Collected	
16090921-001	M1Hpt-21 (1-2)	SOIL	09/09/16 07:40	
16090921-002	M1Hpt-21 (4.5-5.5)	SOIL	09/09/16 07:45	
16090921-003	M1Hpt-21 (9-10)	SOIL	09/09/16 07:55	
16090921-004	M1Hpt-21 (24-25)	SOIL	09/09/16 08:20	
16090921-005	M1Hpt-21 GW (25-28.5)	GROUND WATER	09/09/16 09:20	
16090921-006	M1Hpt-22 (1-2)	SOIL	09/09/16 09:45	
16090921-007	M1Hpt-22 (4-5)	SOIL	09/09/16 09:50	
16090921-008	M1Hpt-22 (19-20)	SOIL	09/09/16 10:10	
16090921-009	M1Hpt-22 (24-25)	SOIL	09/09/16 10:20	
16090921-010	M1Hpt-22 GW (25-28.5)	GROUND WATER	09/09/16 12:10	
16090921-011	M1Hpt-08-GW (36.5-40)	GROUND WATER	09/09/16 08:00	
16090921-012	M1Hpt-10-GW (25-28.5)	GROUND WATER	09/09/16 08:15	
16090921-013	M1Hpt-10-GW (25-28.5)	GROUND WATER	09/09/16 08:15	

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

- 1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
- 2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
- 3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
- 4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminates, and part 141.3, for the secondary drinking water contaminates.
- 5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
- 6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
- 7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
- 8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

- B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- C Results Pending Final Confirmation.
- E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- Fail The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
- J The target analyte was positively identified below the reporting limit but greater than the MDL.
- MDL This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is an estimate of the minimum amount of a substance that an analytical process can reliably detect. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific.
- ND Not Detected at or above the reporting limit.
- RL PSS Reporting Limit.
- U Not detected.



Sample Summary

Client Name: Icor Ltd.

Project Name: Robinson Terminal North

Work Order Number(s): 16090921

Certifications:

NELAP Certifications: PA 68-03330, VA 460156 State Certifications: MD 179, WV 303

Regulated Soil Permit: P330-12-00268 NSWC USCG Accepted Laboratory LDBE MWAA LD1997-0041-2015

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090921

Icor Ltd., Middleburg, VA

September 16, 2016

Sample ID: M1Hpt-21 (1-2)			Sampled:			PSS Sample	e ID: 16090921	-001
Matrix: SOIL	1	Date/Time	Received:	09/09/20	16 16:20	% S	olids: 81	
Organochlorine Pesticides	Analytica	ıl Method: S	W-846 8081	В	ſ	Preparation Meth	nod: SW3550C	
	Result	Units	RL	Flag l	Dil	Prepared	Analyzed	Analyst
alpha-BHC	ND	ug/kg	4.9		1	09/12/16	09/14/16 22:03	1029
gamma-BHC (Lindane)	ND	ug/kg	4.9		1	09/12/16	09/14/16 22:03	1029
beta-BHC	ND	ug/kg	4.9		1	09/12/16	09/14/16 22:03	1029
delta-BHC	ND	ug/kg	4.9		1	09/12/16	09/14/16 22:03	1029
Heptachlor	ND	ug/kg	4.9		1	09/12/16	09/14/16 22:03	1029
Aldrin	ND	ug/kg	4.9		1	09/12/16	09/14/16 22:03	1029
Heptachlor epoxide	ND	ug/kg	4.9		1	09/12/16	09/14/16 22:03	1029
gamma-Chlordane	ND	ug/kg	4.9		1	09/12/16	09/14/16 22:03	1029
alpha-Chlordane	ND	ug/kg	4.9		1	09/12/16	09/14/16 22:03	1029
4,4-DDE	ND	ug/kg	4.9		1	09/12/16	09/14/16 22:03	1029
Endosulfan I	ND	ug/kg	4.9		1	09/12/16	09/14/16 22:03	1029
Dieldrin	ND	ug/kg	4.9		1	09/12/16	09/14/16 22:03	1029
Endrin	ND	ug/kg	4.9		1	09/12/16	09/14/16 22:03	1029
4,4-DDD	ND	ug/kg	4.9		1	09/12/16	09/14/16 22:03	1029
Endosulfan II	ND	ug/kg	4.9		1	09/12/16	09/14/16 22:03	1029
4,4-DDT	ND	ug/kg	4.9		1	09/12/16	09/14/16 22:03	1029
Endrin aldehyde	ND	ug/kg	4.9		1	09/12/16	09/14/16 22:03	1029
Methoxychlor	ND	ug/kg	4.9		1	09/12/16	09/14/16 22:03	1029
Endosulfan sulfate	ND	ug/kg	4.9		1	09/12/16	09/14/16 22:03	1029
Endrin ketone	ND	ug/kg	4.9		1	09/12/16	09/14/16 22:03	1029
Toxaphene	ND	ug/kg	120		1	09/12/16	09/14/16 22:03	1029
Chlordane	ND	ug/kg	120		1	09/12/16	09/14/16 22:03	1029

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090921

Icor Ltd., Middleburg, VA

September 16, 2016

Sample ID: M1Hpt-21 (1-2)		Date/Time	Sampled:	09/09/2	2016 07:40) PSS Sample	e ID: 16090921	I - 001
Matrix: SOIL			Received:			-	olids: 81	1-001
Polychlorinated Biphenyls			W-846 8082			Preparation Meth		
						Clean up Method	: SW846 3665A	
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
PCB-1016	ND	mg/kg	0.061		1	09/12/16	09/12/16 16:13	1029
PCB-1221	ND	mg/kg	0.061		1	09/12/16	09/12/16 16:13	1029
PCB-1232	ND	mg/kg	0.061		1	09/12/16	09/12/16 16:13	1029
PCB-1242	ND	mg/kg	0.061		1	09/12/16	09/12/16 16:13	1029
PCB-1248	ND	mg/kg	0.061		1	09/12/16	09/12/16 16:13	1029
PCB-1254	ND	mg/kg	0.061		1	09/12/16	09/12/16 16:13	1029
PCB-1260	ND	mg/kg	0.061		1	09/12/16	09/12/16 16:13	1029
Chlorinated Herbicides	Analytica	l Method: S\	W-846 8151	Α		Preparation Meth	nod: 8151A	
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Dalapon	ND	ug/kg	600		10	09/12/16	09/13/16 23:18	1029
Dicamba	ND	ug/kg	24		10	09/12/16	09/13/16 23:18	1029
MCPP	ND	ug/kg	24,000		10	09/12/16	09/13/16 23:18	1029
MCPA	ND	ug/kg	24,000		10	09/12/16	09/13/16 23:18	1029
Dichloroprop	ND	ug/kg	240		10	09/12/16	09/13/16 23:18	1029
2,4-D	ND	ug/kg	240		10	09/12/16	09/13/16 23:18	1029
2,4,5-TP (Silvex)	ND	ug/kg	24		10	09/12/16	09/13/16 23:18	1029
2,4,5-T	52	ug/kg	24		10	09/12/16	09/13/16 23:18	1029
Dinoseb	ND	ug/kg	120		10	09/12/16	09/13/16 23:18	1029
DILIOSED	ND	ug/kg	120		10	09/12/10	09/13/10 23.10	1023

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090921

Icor Ltd., Middleburg, VA

September 16, 2016

Sample ID: M1Hpt-21 (4.5-5.5)			Sampled:				e ID: 1609092 [,]	1-002
Matrix: SOIL	[Date/Time	Received:	09/09/	2016 16:2	20 % S	olids: 82	
Arsenic	Analytica	l Method: S	W-846 6020	Α		Preparation Met	nod: 3050B	
_	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Arsenic	7.7	mg/kg	0.46		1	09/14/16	09/15/16 15:08	1033
Organochlorine Pesticides	Analytica	l Method: S	W-846 8081	В		Preparation Met	nod: SW3550C	
_	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
alpha-BHC	ND	ug/kg	4.8		1	09/12/16	09/14/16 17:24	1029
gamma-BHC (Lindane)	ND	ug/kg	4.8		1	09/12/16	09/14/16 17:24	1029
beta-BHC	ND	ug/kg	4.8		1	09/12/16	09/14/16 17:24	1029
delta-BHC	ND	ug/kg	4.8		1	09/12/16	09/14/16 17:24	1029
Heptachlor	ND	ug/kg	4.8		1	09/12/16	09/14/16 17:24	1029
Aldrin	ND	ug/kg	4.8		1	09/12/16	09/14/16 17:24	1029
Heptachlor epoxide	ND	ug/kg	4.8		1	09/12/16	09/14/16 17:24	1029
gamma-Chlordane	ND	ug/kg	4.8		1	09/12/16	09/14/16 17:24	1029
alpha-Chlordane	ND	ug/kg	4.8		1	09/12/16	09/14/16 17:24	1029
4,4-DDE	ND	ug/kg	4.8		1	09/12/16	09/14/16 17:24	1029
Endosulfan I	ND	ug/kg	4.8		1	09/12/16	09/14/16 17:24	1029
Dieldrin	ND	ug/kg	4.8		1	09/12/16	09/14/16 17:24	1029
Endrin	ND	ug/kg	4.8		1	09/12/16	09/14/16 17:24	1029
4,4-DDD	ND	ug/kg	4.8		1	09/12/16	09/14/16 17:24	1029
Endosulfan II	ND	ug/kg	4.8		1	09/12/16	09/14/16 17:24	1029
4,4-DDT	ND	ug/kg	4.8		1	09/12/16	09/14/16 17:24	1029
Endrin aldehyde	ND	ug/kg	4.8		1	09/12/16	09/14/16 17:24	1029
Methoxychlor	ND	ug/kg	4.8		1	09/12/16	09/14/16 17:24	1029
Endosulfan sulfate	ND	ug/kg	4.8		1	09/12/16	09/14/16 17:24	1029
Endrin ketone	ND	ug/kg	4.8		1	09/12/16	09/14/16 17:24	1029
Toxaphene	ND	ug/kg	120		1	09/12/16	09/14/16 17:24	1029
Chlordane	ND	ug/kg	120		1	09/12/16	09/14/16 17:24	1029

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090921

Icor Ltd., Middleburg, VA

September 16, 2016

Sample ID: M1Hpt-21 (4.5-5.5)		Date/Time	Sampled:	09/09/2	2016 07:4	5 PSS Sample	e ID: 16090921	1-002
Matrix: SOIL	1	Date/Time	Received:	09/09/2	2016 16:20	0 % S	olids: 82	
Polychlorinated Biphenyls	Analytica	ll Method: S'	W-846 8082	Α		Preparation Method		
_	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
PCB-1016	ND	mg/kg	0.060		1	09/12/16	09/12/16 16:42	1029
PCB-1221	ND	mg/kg	0.060		1	09/12/16	09/12/16 16:42	1029
PCB-1232	ND	mg/kg	0.060		1	09/12/16	09/12/16 16:42	1029
PCB-1242	ND	mg/kg	0.060		1	09/12/16	09/12/16 16:42	1029
PCB-1248	ND	mg/kg	0.060		1	09/12/16	09/12/16 16:42	1029
PCB-1254	ND	mg/kg	0.060		1	09/12/16	09/12/16 16:42	1029
PCB-1260	ND	mg/kg	0.060		1	09/12/16	09/12/16 16:42	1029
Chlorinated Herbicides	Analytica	ıl Method: S'	W-846 8151	Α		Preparation Meth	nod: 8151A	
_	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Dalapon	ND	ug/kg	640		10	09/12/16	09/14/16 00:23	1029
Dicamba	ND	ug/kg	26		10	09/12/16	09/14/16 00:23	1029
MCPP	ND	ug/kg	26,000		10	09/12/16	09/14/16 00:23	1029
MCPA	ND	ug/kg	26,000		10	09/12/16	09/14/16 00:23	1029
Dichloroprop	ND	ug/kg	260		10	09/12/16	09/14/16 00:23	1029
2,4-D	ND	ug/kg	260		10	09/12/16	09/14/16 00:23	1029
2,4,5-TP (Silvex)	ND	ug/kg	26		10	09/12/16	09/14/16 00:23	1029
-	42	ug/kg	26		10	09/12/16	09/14/16 00:23	1029
2,4,5-T	42	ag/itg						
2,4,5-T Dinoseb	MD	ug/kg	130		10	09/12/16	09/14/16 00:23	1029

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090921

Icor Ltd., Middleburg, VA September 16, 2016

Sample ID: M1Hpt-21 (9-10) Matrix: SOIL			e Sampled: Received:			-	e ID: 1609092 olids: 84	1-003
Total Petroleum Hydrocarbons - DRO	Analytica	al Method: S	SW-846 8015	С		Preparation Meth	nod: SW3550C	
LF/DF - Lighter fuel/oil and No. 2/diesel fue	l patterns obse	erved in samp	ole.					
<u> </u>	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-DRO (Diesel Range Organics)	49	mg/kg	12	LF	1	09/14/16	09/16/16 03:5	3 1045
Total Petroleum Hydrocarbons-GRO	Analytica	al Method: S	SW-846 8015	С		Preparation Meth	nod: 5030	
_	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-GRO (Gasoline Range Organics)	760,000	ug/kg	12,000		100	09/13/16	09/13/16 15:3	9 1035

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090921

Icor Ltd., Middleburg, VA

September 16, 2016

Sample ID: M1Hpt-21 (9-10)		Date/Time Sampled:				•			
Matrix: SOIL	[Date/Time	Received:	09/09/2016 16:20 % Solids: 84					
TCL Volatile Organic Compounds	Analytica	l Method: S	SW-846 8260	В	F	Preparation Meth			
	Result	Units	RL	Flag Dil		Prepared	Analyzed	Analyst	
Acetone	ND	ug/kg	1,900	100)	09/15/16	09/16/16 05:34	1011	
Benzene	ND	ug/kg	490	100)	09/15/16	09/16/16 05:34	1011	
Bromochloromethane	ND	ug/kg	490	100)	09/15/16	09/16/16 05:34	1011	
Bromodichloromethane	ND	ug/kg	490	100)	09/15/16	09/16/16 05:34	1011	
Bromoform	ND	ug/kg	490	100)	09/15/16	09/16/16 05:34	1011	
Bromomethane	ND	ug/kg	490	100)	09/15/16	09/16/16 05:34	1011	
2-Butanone (MEK)	ND	ug/kg	1,900	100)	09/15/16	09/16/16 05:34	1011	
Carbon Disulfide	ND	ug/kg	970	100)	09/15/16	09/16/16 05:34	1011	
Carbon Tetrachloride	ND	ug/kg	490	100)	09/15/16	09/16/16 05:34	1011	
Chlorobenzene	ND	ug/kg	490	100)	09/15/16	09/16/16 05:34	1011	
Chloroethane	ND	ug/kg	490	100)	09/15/16	09/16/16 05:34	1011	
Chloroform	ND	ug/kg	490	100)	09/15/16	09/16/16 05:34	1011	
Chloromethane	ND	ug/kg	490	100)	09/15/16	09/16/16 05:34	1011	
Cyclohexane	190,000	ug/kg	97,000	5000)	09/15/16	09/16/16 10:51	1011	
1,2-Dibromo-3-Chloropropane	ND	ug/kg	3,900	100)	09/15/16	09/16/16 05:34	1011	
Dibromochloromethane	ND	ug/kg	490	100)	09/15/16	09/16/16 05:34	1011	
1,2-Dibromoethane (EDB)	ND	ug/kg	490	100)	09/15/16	09/16/16 05:34	1011	
1,2-Dichlorobenzene	ND	ug/kg	490	100)	09/15/16	09/16/16 05:34	1011	
1,3-Dichlorobenzene	ND	ug/kg	490	100)	09/15/16	09/16/16 05:34	1011	
1,4-Dichlorobenzene	ND	ug/kg	490	100)	09/15/16	09/16/16 05:34	1011	
Dichlorodifluoromethane	ND	ug/kg	490	100)	09/15/16	09/16/16 05:34	1011	
1,1-Dichloroethane	ND	ug/kg	490	100)	09/15/16	09/16/16 05:34	1011	
1,2-Dichloroethane	ND	ug/kg	490	100)	09/15/16	09/16/16 05:34	1011	
1,1-Dichloroethene	ND	ug/kg	490	100)	09/15/16	09/16/16 05:34	1011	
cis-1,2-Dichloroethene	ND	ug/kg	490	100)	09/15/16	09/16/16 05:34	1011	
1,2-Dichloropropane	ND	ug/kg	490	100)	09/15/16	09/16/16 05:34	1011	
cis-1,3-Dichloropropene	ND	ug/kg	490	100)	09/15/16	09/16/16 05:34	1011	
trans-1,2-Dichloroethene	ND	ug/kg	490	100)	09/15/16	09/16/16 05:34	1011	
trans-1,3-Dichloropropene	ND	ug/kg	490	100)	09/15/16	09/16/16 05:34	1011	
Ethylbenzene	8,500	ug/kg	490	100)	09/15/16	09/16/16 05:34	1011	

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090921

Icor Ltd., Middleburg, VA

September 16, 2016

Sample ID: M1Hpt-21 (9-10)			e Sampled:			-	e ID: 16090921	I-003
Matrix: SOIL	[Date/Time	Received:	09/09/201	6 16:20	% S	olids: 84	
TCL Volatile Organic Compounds	Analytica	l Method: \$	SW-846 8260	В	I	Preparation Meth	nod: 5035A	
	Result	Units	RL	Flag Di	I	Prepared	Analyzed	Analyst
2-Hexanone	ND	ug/kg	1,900	10	00	09/15/16	09/16/16 05:34	1011
Isopropylbenzene	1,900	ug/kg	490	10	00	09/15/16	09/16/16 05:34	1011
Methyl Acetate	ND	ug/kg	1,900	10	00	09/15/16	09/16/16 05:34	1011
Methylcyclohexane	400,000	ug/kg	97,000	500	00	09/15/16	09/16/16 10:51	1011
Methylene Chloride	ND	ug/kg	490	10	00	09/15/16	09/16/16 05:34	1011
4-Methyl-2-Pentanone	ND	ug/kg	1,900	10	00	09/15/16	09/16/16 05:34	1011
Methyl-t-butyl ether	ND	ug/kg	490	10	00	09/15/16	09/16/16 05:34	1011
Naphthalene	ND	ug/kg	490	10	00	09/15/16	09/16/16 05:34	1011
Styrene	ND	ug/kg	490	10	00	09/15/16	09/16/16 05:34	1011
1,1,2,2-Tetrachloroethane	ND	ug/kg	490	10	00	09/15/16	09/16/16 05:34	1011
Tetrachloroethene	3,800	ug/kg	490	10	00	09/15/16	09/16/16 05:34	1011
Toluene	990	ug/kg	490	10	00	09/15/16	09/16/16 05:34	1011
1,2,3-Trichlorobenzene	ND	ug/kg	490	10	00	09/15/16	09/16/16 05:34	1011
1,2,4-Trichlorobenzene	ND	ug/kg	490	10	00	09/15/16	09/16/16 05:34	1011
1,1,1-Trichloroethane	ND	ug/kg	490	10	00	09/15/16	09/16/16 05:34	1011
1,1,2-Trichloroethane	ND	ug/kg	490	10	00	09/15/16	09/16/16 05:34	1011
Trichloroethene	ND	ug/kg	490	10	00	09/15/16	09/16/16 05:34	1011
Trichlorofluoromethane	ND	ug/kg	490	10	00	09/15/16	09/16/16 05:34	1011
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	ug/kg	490	10	00	09/15/16	09/16/16 05:34	1011
Vinyl Chloride	ND	ug/kg	490	10	00	09/15/16	09/16/16 05:34	1011
m,p-Xylenes	14,000	ug/kg	970	10	00	09/15/16	09/16/16 05:34	1011
o-Xylene	700	ug/kg	490	10	00	09/15/16	09/16/16 05:34	1011

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090921

Icor Ltd., Middleburg, VA September 16, 2016

Sample ID: M1Hpt-21 (24-25)		Date/Time	Sampled: 09/09/	2016 08:	20 PSS Sampl	e ID: 1609092	1-004
Matrix: SOIL	I	Date/Time I	Received: 09/09/	2016 16:	20 % S	olids: 82	
Total Petroleum Hydrocarbons - DRO	Analytica	ll Method: SV	V-846 8015 C		Preparation Meth	nod: SW3550C	
_	Result	Units	RL Flag	Dil	Prepared	Analyzed	Analyst
TPH-DRO (Diesel Range Organics)	ND	mg/kg	12	1	09/14/16	09/16/16 04:18	8 1045
Total Petroleum Hydrocarbons-GRO	Analytica	l Method: SV	V-846 8015C		Preparation Meth	nod: 5030	
_	Result	Units	RL Flag	Dil	Prepared	Analyzed	Analyst
TPH-GRO (Gasoline Range Organics)	ND	ug/kg	120	1	09/12/16	09/13/16 02:00	0 1035

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090921

Icor Ltd., Middleburg, VA

September 16, 2016

Sample ID: M1Hpt-21 (24-25) Matrix: SOIL			Sampled:			-	e ID: 1609092 [,] olids: 82	1-004
TCL Volatile Organic Compounds			W-846 8260			Preparation Meth		
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acetone	ND	ug/kg	21		1	09/15/16	09/15/16 20:56	1011
Benzene	ND	ug/kg	5.2		1	09/15/16	09/15/16 20:56	1011
Bromochloromethane	ND	ug/kg	5.2		1	09/15/16	09/15/16 20:56	1011
Bromodichloromethane	ND	ug/kg	5.2		1	09/15/16	09/15/16 20:56	1011
Bromoform	ND	ug/kg	5.2		1	09/15/16	09/15/16 20:56	1011
Bromomethane	ND	ug/kg	5.2		1	09/15/16	09/15/16 20:56	1011
2-Butanone (MEK)	ND	ug/kg	21		1	09/15/16	09/15/16 20:56	1011
Carbon Disulfide	ND	ug/kg	10		1	09/15/16	09/15/16 20:56	1011
Carbon Tetrachloride	ND	ug/kg	5.2		1	09/15/16	09/15/16 20:56	1011
Chlorobenzene	ND	ug/kg	5.2		1	09/15/16	09/15/16 20:56	1011
Chloroethane	ND	ug/kg	5.2		1	09/15/16	09/15/16 20:56	1011
Chloroform	ND	ug/kg	5.2		1	09/15/16	09/15/16 20:56	1011
Chloromethane	ND	ug/kg	5.2		1	09/15/16	09/15/16 20:56	1011
Cyclohexane	ND	ug/kg	21		1	09/15/16	09/15/16 20:56	1011
1,2-Dibromo-3-Chloropropane	ND	ug/kg	41		1	09/15/16	09/15/16 20:56	1011
Dibromochloromethane	ND	ug/kg	5.2		1	09/15/16	09/15/16 20:56	1011
1,2-Dibromoethane (EDB)	ND	ug/kg	5.2		1	09/15/16	09/15/16 20:56	1011
1,2-Dichlorobenzene	ND	ug/kg	5.2		1	09/15/16	09/15/16 20:56	1011
1,3-Dichlorobenzene	ND	ug/kg	5.2		1	09/15/16	09/15/16 20:56	1011
1,4-Dichlorobenzene	ND	ug/kg	5.2		1	09/15/16	09/15/16 20:56	1011
Dichlorodifluoromethane	ND	ug/kg	5.2		1	09/15/16	09/15/16 20:56	1011
1,1-Dichloroethane	ND	ug/kg	5.2		1	09/15/16	09/15/16 20:56	1011
1,2-Dichloroethane	ND	ug/kg	5.2		1	09/15/16	09/15/16 20:56	1011
1,1-Dichloroethene	ND	ug/kg	5.2		1	09/15/16	09/15/16 20:56	1011
cis-1,2-Dichloroethene	ND	ug/kg	5.2		1	09/15/16	09/15/16 20:56	1011
1,2-Dichloropropane	ND	ug/kg	5.2		1	09/15/16	09/15/16 20:56	1011
cis-1,3-Dichloropropene	ND	ug/kg	5.2		1	09/15/16	09/15/16 20:56	1011
trans-1,2-Dichloroethene	ND	ug/kg	5.2		1	09/15/16	09/15/16 20:56	1011
trans-1,3-Dichloropropene	ND	ug/kg	5.2		1	09/15/16	09/15/16 20:56	1011
Ethylbenzene	ND	ug/kg	5.2		1	09/15/16	09/15/16 20:56	1011

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090921

Icor Ltd., Middleburg, VA

September 16, 2016

Sample ID: M1Hpt-21 (24-25)		Date/Tim	e Sampled:	09/09/20	16 08:20	PSS Sample	e ID: 1609092	1-004
Matrix: SOIL		Date/Tim	e Received:	09/09/20	16 16:20) % S	olids: 82	
TCL Volatile Organic Compounds	Analytica	l Method:	SW-846 8260		Preparation Method: 5035A			
_	Result	Units	RL	Flag I	Dil	Prepared	Analyzed	Analyst
2-Hexanone	ND	ug/kg	21		1	09/15/16	09/15/16 20:56	1011
Isopropylbenzene	ND	ug/kg	5.2		1	09/15/16	09/15/16 20:56	1011
Methyl Acetate	ND	ug/kg	21		1	09/15/16	09/15/16 20:56	1011
Methylcyclohexane	ND	ug/kg	21		1	09/15/16	09/15/16 20:56	1011
Methylene Chloride	ND	ug/kg	5.2		1	09/15/16	09/15/16 20:56	1011
4-Methyl-2-Pentanone	ND	ug/kg	21		1	09/15/16	09/15/16 20:56	1011
Methyl-t-butyl ether	ND	ug/kg	5.2		1	09/15/16	09/15/16 20:56	1011
Naphthalene	ND	ug/kg	5.2		1	09/15/16	09/15/16 20:56	1011
Styrene	ND	ug/kg	5.2		1	09/15/16	09/15/16 20:56	1011
1,1,2,2-Tetrachloroethane	ND	ug/kg	5.2		1	09/15/16	09/15/16 20:56	1011
Tetrachloroethene	ND	ug/kg	5.2		1	09/15/16	09/15/16 20:56	1011
Toluene	ND	ug/kg	5.2		1	09/15/16	09/15/16 20:56	1011
1,2,3-Trichlorobenzene	ND	ug/kg	5.2		1	09/15/16	09/15/16 20:56	1011
1,2,4-Trichlorobenzene	ND	ug/kg	5.2		1	09/15/16	09/15/16 20:56	1011
1,1,1-Trichloroethane	ND	ug/kg	5.2		1	09/15/16	09/15/16 20:56	1011
1,1,2-Trichloroethane	ND	ug/kg	5.2		1	09/15/16	09/15/16 20:56	1011
Trichloroethene	ND	ug/kg	5.2		1	09/15/16	09/15/16 20:56	1011
Trichlorofluoromethane	ND	ug/kg	5.2		1	09/15/16	09/15/16 20:56	1011
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	ug/kg	5.2		1	09/15/16	09/15/16 20:56	1011
Vinyl Chloride	ND	ug/kg	5.2		1	09/15/16	09/15/16 20:56	1011
m,p-Xylenes	ND	ug/kg	10		1	09/15/16	09/15/16 20:56	1011
o-Xylene	ND	ug/kg	5.2		1	09/15/16	09/15/16 20:56	1011

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090921

Icor Ltd., Middleburg, VA

September 16, 2016

Sample ID: M1Hpt-21 (24-25)			e Sampled:			-	e ID: 1609092	1-004
Matrix: SOIL			e Received:				olids: 82	
TCL Semivolatile Organic Compounds	Analytica	I Method:	SW-846 8270	С		Preparation Meth	nod: SW3550C	
	Result	Units	RL	Flag [Dil	Prepared	Analyzed	Analyst
Acenaphthene	ND	ug/kg	200		1	09/12/16	09/12/16 16:46	1055
Acenaphthylene	ND	ug/kg	200		1	09/12/16	09/12/16 16:46	1055
Acetophenone	ND	ug/kg	200		1	09/12/16	09/12/16 16:46	1055
Anthracene	ND	ug/kg	200		1	09/12/16	09/12/16 16:46	1055
Atrazine	ND	ug/kg	200		1	09/12/16	09/12/16 16:46	1055
Benzo(a)anthracene	ND	ug/kg	200		1	09/12/16	09/12/16 16:46	1055
Benzo(a)pyrene	ND	ug/kg	200		1	09/12/16	09/12/16 16:46	1055
Benzo(b)fluoranthene	ND	ug/kg	200		1	09/12/16	09/12/16 16:46	1055
Benzo(g,h,i)perylene	ND	ug/kg	200		1	09/12/16	09/12/16 16:46	1055
Benzo(k)fluoranthene	ND	ug/kg	200		1	09/12/16	09/12/16 16:46	1055
Biphenyl (Diphenyl)	ND	ug/kg	200		1	09/12/16	09/12/16 16:46	1055
Butyl benzyl phthalate	ND	ug/kg	200		1	09/12/16	09/12/16 16:46	1055
bis(2-chloroethoxy) methane	ND	ug/kg	200		1	09/12/16	09/12/16 16:46	1055
bis(2-chloroethyl) ether	ND	ug/kg	200		1	09/12/16	09/12/16 16:46	1055
bis(2-chloroisopropyl) ether	ND	ug/kg	200		1	09/12/16	09/12/16 16:46	1055
bis(2-ethylhexyl) phthalate	ND	ug/kg	200		1	09/12/16	09/12/16 16:46	1055
4-Bromophenylphenyl ether	ND	ug/kg	200		1	09/12/16	09/12/16 16:46	1055
Di-n-butyl phthalate	ND	ug/kg	200		1	09/12/16	09/12/16 16:46	1055
Carbazole	ND	ug/kg	200		1	09/12/16	09/12/16 16:46	1055
Caprolactam	ND	ug/kg	200		1	09/12/16	09/12/16 16:46	1055
4-Chloro-3-methyl phenol	ND	ug/kg	200		1	09/12/16	09/12/16 16:46	1055
4-Chloroaniline	ND	ug/kg	200		1	09/12/16	09/12/16 16:46	1055
2-Chloronaphthalene	ND	ug/kg	200		1	09/12/16	09/12/16 16:46	1055
2-Chlorophenol	ND	ug/kg	200		1	09/12/16	09/12/16 16:46	1055
4-Chlorophenyl Phenyl ether	ND	ug/kg	200		1	09/12/16	09/12/16 16:46	1055
Chrysene	ND	ug/kg	200		1	09/12/16	09/12/16 16:46	1055
Dibenz(a,h)Anthracene	ND	ug/kg	200		1	09/12/16	09/12/16 16:46	1055
Dibenzofuran	ND	ug/kg	200		1	09/12/16	09/12/16 16:46	1055
3,3-Dichlorobenzidine	ND	ug/kg	200		1	09/12/16	09/12/16 16:46	1055
2,4-Dichlorophenol	ND	ug/kg	200		1	09/12/16	09/12/16 16:46	1055

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090921

Icor Ltd., Middleburg, VA

September 16, 2016

Sample ID: M1Hpt-21 (24-25)	Date/Time Sampled:					-		
Matrix: SOIL					2016 16:20		olids: 82	
TCL Semivolatile Organic Compounds	Analytica	I Method: S'	W-846 8270	С	ſ	Preparation Meth	nod: SW3550C	
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Diethyl phthalate	ND	ug/kg	200		1	09/12/16	09/12/16 16:46	1055
Dimethyl phthalate	ND	ug/kg	200		1	09/12/16	09/12/16 16:46	1055
2,4-Dimethylphenol	ND	ug/kg	200		1	09/12/16	09/12/16 16:46	1055
4,6-Dinitro-2-methyl phenol	ND	ug/kg	200		1	09/12/16	09/12/16 16:46	1055
2,4-Dinitrophenol	ND	ug/kg	400		1	09/12/16	09/12/16 16:46	1055
2,4-Dinitrotoluene	ND	ug/kg	200		1	09/12/16	09/12/16 16:46	1055
2,6-Dinitrotoluene	ND	ug/kg	200		1	09/12/16	09/12/16 16:46	1055
Fluoranthene	ND	ug/kg	200		1	09/12/16	09/12/16 16:46	1055
Fluorene	ND	ug/kg	200		1	09/12/16	09/12/16 16:46	1055
Hexachlorobenzene	ND	ug/kg	200		1	09/12/16	09/12/16 16:46	1055
Hexachlorobutadiene	ND	ug/kg	200		1	09/12/16	09/12/16 16:46	1055
Hexachlorocyclopentadiene	ND	ug/kg	200		1	09/12/16	09/12/16 16:46	1055
Hexachloroethane	ND	ug/kg	200		1	09/12/16	09/12/16 16:46	1055
Indeno(1,2,3-c,d)Pyrene	ND	ug/kg	200		1	09/12/16	09/12/16 16:46	1055
Isophorone	ND	ug/kg	200		1	09/12/16	09/12/16 16:46	1055
2-Methylnaphthalene	ND	ug/kg	200		1	09/12/16	09/12/16 16:46	1055
2-Methyl phenol	ND	ug/kg	200		1	09/12/16	09/12/16 16:46	1055
3&4-Methylphenol	ND	ug/kg	200		1	09/12/16	09/12/16 16:46	1055
Naphthalene	ND	ug/kg	200		1	09/12/16	09/12/16 16:46	1055
2-Nitroaniline	ND	ug/kg	200		1	09/12/16	09/12/16 16:46	1055
3-Nitroaniline	ND	ug/kg	200		1	09/12/16	09/12/16 16:46	1055
4-Nitroaniline	ND	ug/kg	200		1	09/12/16	09/12/16 16:46	1055
Nitrobenzene	ND	ug/kg	200		1	09/12/16	09/12/16 16:46	1055
2-Nitrophenol	ND	ug/kg	200		1	09/12/16	09/12/16 16:46	1055
4-Nitrophenol	ND	ug/kg	200		1	09/12/16	09/12/16 16:46	1055
N-Nitrosodi-n-propyl amine	ND	ug/kg	200		1	09/12/16	09/12/16 16:46	1055
N-Nitrosodiphenylamine	ND	ug/kg	200		1	09/12/16	09/12/16 16:46	1055
Di-n-octyl phthalate	ND	ug/kg	200		1	09/12/16	09/12/16 16:46	1055
Pentachlorophenol	ND	ug/kg	200		1	09/12/16	09/12/16 16:46	1055
Phenanthrene	ND	ug/kg	200		1	09/12/16	09/12/16 16:46	1055

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090921

Icor Ltd., Middleburg, VA

September 16, 2016

Sample ID: M1Hpt-21 (24-25) Matrix: SOIL			e Sampled: e Received:			·	e ID: 1609092 olids: 82	1-004
TCL Semivolatile Organic Compounds	Analytical	Method:	SW-846 8270	Preparation Method: SW3550C				
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Phenol	ND	ug/kg	200		1	09/12/16	09/12/16 16:46	1055
Pyrene	ND	ug/kg	200		1	09/12/16	09/12/16 16:46	1055
Pyridine	ND	ug/kg	200		1	09/12/16	09/12/16 16:46	1055
2,4,5-Trichlorophenol	ND	ug/kg	200		1	09/12/16	09/12/16 16:46	3 1055
2,4,6-Trichlorophenol	ND	ug/kg	200		1	09/12/16	09/12/16 16:46	1055

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090921

Icor Ltd., Middleburg, VA September 16, 2016

Sample ID: M1Hpt-21 GW (25-28.5	5)	Date/Time \$	Sampled:	09/09/	2016 09:2	0 PSS Sampl	e ID: 1609092	21-005	
Matrix: GROUND WATER	[Date/Time F	Received:	09/09/	2016 16:2	0			
Oil and Grease	Analytica	l Method: EP	A 1664 A						
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst	
Oil & Grease, Total Recovered	ND	mg/L	2.3		1	09/15/16	09/15/16 13:1	14 1022	
Total Petroleum Hydrocarbons	Analytica	l Method: EP	A 1664 A						
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst	
TPH	ND	mg/L	2.3		1	09/15/16	09/15/16 12:5	59 1022	
Total Petroleum Hydrocarbons - DRO	Analytica	l Method: SW	/-846 8015	С		Preparation Method: 3510C			
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst	
TPH-DRO (Diesel Range Organics)	ND	mg/L	0.10		1	09/14/16	09/15/16 19:0	7 1045	
Total Petroleum Hydrocarbons-GRO	Analytica	Analytical Method: SW-846 8015C				Preparation Met	Preparation Method: 5030B		
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst	
TPH-GRO (Gasoline Range Organics)	ND	ug/L	100		1	09/15/16	09/15/16 13:1	19 1035	

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090921

Icor Ltd., Middleburg, VA

September 16, 2016

Sample ID: M1Hpt-21 GW (25-28.5) Matrix: GROUND WATER			e Sampled: e Received:			-	e ID: 1609092 [.]	1-005
TCL Volatile Organic Compounds			SW-846 8260			Preparation Met	nod: 5030B	
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acetone	ND	ug/L	10		1	09/14/16	09/14/16 02:30	1011
Benzene	ND	ug/L	1.0		1	09/14/16	09/14/16 02:30	1011
Bromochloromethane	ND	ug/L	1.0		1	09/14/16	09/14/16 02:30	1011
Bromodichloromethane	ND	ug/L	1.0		1	09/14/16	09/14/16 02:30	1011
Bromoform	ND	ug/L	5.0		1	09/14/16	09/14/16 02:30	1011
Bromomethane	ND	ug/L	1.0		1	09/14/16	09/14/16 02:30	1011
2-Butanone (MEK)	ND	ug/L	10		1	09/14/16	09/14/16 02:30	1011
Carbon Disulfide	ND	ug/L	10		1	09/14/16	09/14/16 02:30	1011
Carbon Tetrachloride	ND	ug/L	1.0		1	09/14/16	09/14/16 02:30	1011
Chlorobenzene	ND	ug/L	1.0		1	09/14/16	09/14/16 02:30	1011
Chloroethane	ND	ug/L	1.0		1	09/14/16	09/14/16 02:30	1011
Chloroform	ND	ug/L	1.0		1	09/14/16	09/14/16 02:30	1011
Chloromethane	ND	ug/L	1.0		1	09/14/16	09/14/16 02:30	1011
Cyclohexane	ND	ug/L	10		1	09/14/16	09/14/16 02:30	1011
1,2-Dibromo-3-Chloropropane	ND	ug/L	10		1	09/14/16	09/14/16 02:30	1011
Dibromochloromethane	ND	ug/L	1.0		1	09/14/16	09/14/16 02:30	1011
1,2-Dibromoethane (EDB)	ND	ug/L	1.0		1	09/14/16	09/14/16 02:30	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	09/14/16	09/14/16 02:30	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	09/14/16	09/14/16 02:30	1011
Dichlorodifluoromethane	ND	ug/L	1.0		1	09/14/16	09/14/16 02:30	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	09/14/16	09/14/16 02:30	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	09/14/16	09/14/16 02:30	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	09/14/16	09/14/16 02:30	1011
cis-1,2-Dichloroethene	ND	ug/L	1.0		1	09/14/16	09/14/16 02:30	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	09/14/16	09/14/16 02:30	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	09/14/16	09/14/16 02:30	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1		09/14/16 02:30	
trans-1,3-Dichloropropene	ND	ug/L	1.0		1	09/14/16	09/14/16 02:30	1011
trans-1,2-Dichloroethene	ND	ug/L	1.0		1		09/14/16 02:30	
Ethylbenzene	ND	ug/L	1.0		1	09/14/16	09/14/16 02:30	1011

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090921

Icor Ltd., Middleburg, VA

September 16, 2016

Sample ID: M1Hpt-21 GW (25-28.5)	Date/Time Sampled: 09/09/2016 (09:20 PSS Sample ID: 16090921-005
Matrix: GROUND WATER	Date/Time Received: 09/09/2016	16:20
TCL Volatile Organic Compounds	Analytical Method: SW-846 8260 B	Preparation Method: 5030B

TCL Volatile Organic Compounds	Analytica	i Method: S	0VV-846 8260 B	Preparation Method: 5030B					
_	Result	Units	RL Flag	Dil	Prepared	Analyzed	Analyst		
2-Hexanone	ND	ug/L	10	1	09/14/16	09/14/16 02:30	1011		
Isopropylbenzene	ND	ug/L	1.0	1	09/14/16	09/14/16 02:30	1011		
Methyl Acetate	ND	ug/L	10	1	09/14/16	09/14/16 02:30	1011		
Methylcyclohexane	ND	ug/L	10	1	09/14/16	09/14/16 02:30	1011		
Methylene Chloride	ND	ug/L	1.0	1	09/14/16	09/14/16 02:30	1011		
4-Methyl-2-Pentanone	ND	ug/L	5.0	1	09/14/16	09/14/16 02:30	1011		
Methyl-t-butyl ether	5.9	ug/L	1.0	1	09/14/16	09/14/16 02:30	1011		
Naphthalene	ND	ug/L	1.0	1	09/14/16	09/14/16 02:30	1011		
Styrene	ND	ug/L	1.0	1	09/14/16	09/14/16 02:30	1011		
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1	09/14/16	09/14/16 02:30	1011		
Tetrachloroethene	ND	ug/L	1.0	1	09/14/16	09/14/16 02:30	1011		
Toluene	ND	ug/L	1.0	1	09/14/16	09/14/16 02:30	1011		
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1	09/14/16	09/14/16 02:30	1011		
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1	09/14/16	09/14/16 02:30	1011		
1,1,1-Trichloroethane	ND	ug/L	1.0	1	09/14/16	09/14/16 02:30	1011		
1,1,2-Trichloroethane	ND	ug/L	1.0	1	09/14/16	09/14/16 02:30	1011		
Trichloroethene	ND	ug/L	1.0	1	09/14/16	09/14/16 02:30	1011		
Trichlorofluoromethane	ND	ug/L	5.0	1	09/14/16	09/14/16 02:30	1011		
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	ug/L	1.0	1	09/14/16	09/14/16 02:30	1011		
Vinyl Chloride	ND	ug/L	1.0	1	09/14/16	09/14/16 02:30	1011		
m,p-Xylenes	ND	ug/L	2.0	1	09/14/16	09/14/16 02:30	1011		
o-Xylene	ND	ug/L	1.0	1	09/14/16	09/14/16 02:30	1011		

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

Date/Time Sampled: 09/09/2016 09:20 PSS Sample ID: 16090921-005

No: 16090921

Icor Ltd., Middleburg, VA

September 16, 2016

Project Name: Robinson Terminal North Project Location: 500/501 N. Union St.

Sample ID: M1Hpt-21 GW (25-28.5)

Sample ID: M1Hpt-21 GW (25-28.5)			Sampled: 09/0		PSS Sampl	e ID: 1609092	1-005
Matrix: GROUND WATER			Received: 09/0				
TCL Semivolatile Organic Compounds	Analytica	l Method: S	W-846 8270 C	F	Preparation Met	nod: 3510C	
	Result	Units	RL Fla	g Dil	Prepared	Analyzed	Analyst
Acenaphthene	ND	ug/L	5.0	1	09/13/16	09/14/16 06:48	3 1055
Acenaphthylene	ND	ug/L	5.0	1	09/13/16	09/14/16 06:48	3 1055
Acetophenone	ND	ug/L	5.0	1	09/13/16	09/14/16 06:48	3 1055
Anthracene	ND	ug/L	5.0	1	09/13/16	09/14/16 06:48	3 1055
Atrazine	ND	ug/L	5.0	1	09/13/16	09/14/16 06:48	3 1055
Benzo(a)anthracene	ND	ug/L	5.0	1	09/13/16	09/14/16 06:48	3 1055
Benzo(a)pyrene	ND	ug/L	5.0	1	09/13/16	09/14/16 06:48	3 1055
Benzo(b)fluoranthene	ND	ug/L	5.0	1	09/13/16	09/14/16 06:48	3 1055
Benzo(g,h,i)perylene	ND	ug/L	5.0	1	09/13/16	09/14/16 06:48	3 1055
Benzo(k)fluoranthene	ND	ug/L	5.0	1	09/13/16	09/14/16 06:48	3 1055
Biphenyl (Diphenyl)	ND	ug/L	5.0	1	09/13/16	09/14/16 06:48	3 1055
Butyl benzyl phthalate	ND	ug/L	5.0	1	09/13/16	09/14/16 06:48	3 1055
bis(2-chloroethoxy) methane	ND	ug/L	5.0	1	09/13/16	09/14/16 06:48	3 1055
bis(2-chloroethyl) ether	ND	ug/L	5.0	1	09/13/16	09/14/16 06:48	3 1055
bis(2-chloroisopropyl) ether	ND	ug/L	5.0	1	09/13/16	09/14/16 06:48	3 1055
bis(2-ethylhexyl) phthalate	ND	ug/L	5.0	1	09/13/16	09/14/16 06:48	3 1055
4-Bromophenylphenyl ether	ND	ug/L	5.0	1	09/13/16	09/14/16 06:48	3 1055
Di-n-butyl phthalate	ND	ug/L	5.0	1	09/13/16	09/14/16 06:48	3 1055
Carbazole	ND	ug/L	5.0	1	09/13/16	09/14/16 06:48	3 1055
Caprolactam	ND	ug/L	5.0	1	09/13/16	09/14/16 06:48	3 1055
4-Chloro-3-methyl phenol	ND	ug/L	5.0	1	09/13/16	09/14/16 06:48	3 1055
4-Chloroaniline	ND	ug/L	5.0	1	09/13/16	09/14/16 06:48	3 1055
2-Chloronaphthalene	ND	ug/L	5.0	1	09/13/16	09/14/16 06:48	3 1055
2-Chlorophenol	ND	ug/L	5.0	1	09/13/16	09/14/16 06:48	3 1055
4-Chlorophenyl Phenyl ether	ND	ug/L	5.0	1	09/13/16	09/14/16 06:48	3 1055
Chrysene	ND	ug/L	5.0	1	09/13/16	09/14/16 06:48	3 1055
Dibenz(a,h)Anthracene	ND	ug/L	5.0	1	09/13/16	09/14/16 06:48	3 1055
Dibenzofuran	ND	ug/L	5.0	1	09/13/16	09/14/16 06:48	3 1055
3,3-Dichlorobenzidine	ND	ug/L	5.0	1	09/13/16	09/14/16 06:48	3 1055
2,4-Dichlorophenol	ND	ug/L	5.0	1	09/13/16	09/14/16 06:48	3 1055

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090921

Icor Ltd., Middleburg, VA

September 16, 2016

Sample ID: M1Hpt-21 GW (25-28.5) Matrix: GROUND WATER			Sampled: Received:			PSS Sample	e ID: 16090921	1-005
TCL Semivolatile Organic Compounds			W-846 8270			Preparation Meth	nod: 3510C	
	Result	Units	RL	Flag I	Dil	Prepared	Analyzed	Analyst
Diethyl phthalate	ND	ug/L	5.0		1	09/13/16	09/14/16 06:48	1055
Dimethyl phthalate	ND	ug/L	5.0		1	09/13/16	09/14/16 06:48	1055
2,4-Dimethylphenol	ND	ug/L	5.0		1	09/13/16	09/14/16 06:48	1055
4,6-Dinitro-2-methyl phenol	ND	ug/L	5.0		1	09/13/16	09/14/16 06:48	1055
2,4-Dinitrophenol	ND	ug/L	10		1	09/13/16	09/14/16 06:48	1055
2,4-Dinitrotoluene	ND	ug/L	5.0		1	09/13/16	09/14/16 06:48	1055
2,6-Dinitrotoluene	ND	ug/L	5.0		1	09/13/16	09/14/16 06:48	1055
Fluoranthene	ND	ug/L	5.0		1	09/13/16	09/14/16 06:48	1055
Fluorene	ND	ug/L	5.0		1	09/13/16	09/14/16 06:48	1055
Hexachlorobenzene	ND	ug/L	5.0		1	09/13/16	09/14/16 06:48	1055
Hexachlorobutadiene	ND	ug/L	5.0		1	09/13/16	09/14/16 06:48	1055
Hexachlorocyclopentadiene	ND	ug/L	5.0		1	09/13/16	09/14/16 06:48	1055
Hexachloroethane	ND	ug/L	5.0		1	09/13/16	09/14/16 06:48	1055
Indeno(1,2,3-c,d)Pyrene	ND	ug/L	5.0		1	09/13/16	09/14/16 06:48	1055
Isophorone	ND	ug/L	5.0		1	09/13/16	09/14/16 06:48	1055
2-Methylnaphthalene	ND	ug/L	5.0		1	09/13/16	09/14/16 06:48	1055
2-Methyl phenol	ND	ug/L	5.0		1	09/13/16	09/14/16 06:48	1055
3&4-Methylphenol	ND	ug/L	5.0		1	09/13/16	09/14/16 06:48	1055
Naphthalene	ND	ug/L	5.0		1	09/13/16	09/14/16 06:48	1055
2-Nitroaniline	ND	ug/L	5.0		1	09/13/16	09/14/16 06:48	1055
3-Nitroaniline	ND	ug/L	5.0		1	09/13/16	09/14/16 06:48	1055
4-Nitroaniline	ND	ug/L	5.0		1	09/13/16	09/14/16 06:48	1055
Nitrobenzene	ND	ug/L	5.0		1	09/13/16	09/14/16 06:48	1055
2-Nitrophenol	ND	ug/L	5.0		1	09/13/16	09/14/16 06:48	1055
4-Nitrophenol	ND	ug/L	5.0		1	09/13/16	09/14/16 06:48	1055
N-Nitrosodi-n-propyl amine	ND	ug/L	5.0		1	09/13/16	09/14/16 06:48	1055
N-Nitrosodiphenylamine	ND	ug/L	5.0		1	09/13/16	09/14/16 06:48	1055
Di-n-octyl phthalate	ND	ug/L	5.0		1	09/13/16	09/14/16 06:48	1055
Pentachlorophenol	ND	ug/L	5.0		1	09/13/16	09/14/16 06:48	1055
Phenanthrene	ND	ug/L	5.0		1	09/13/16	09/14/16 06:48	1055

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090921

Icor Ltd., Middleburg, VA

September 16, 2016

Sample ID: M1Hpt-21 GW (25-28.5) Matrix: GROUND WATER			•	9/09/2016 09:2 9/09/2016 16:2		e ID: 1609092 ⁻	1-005
TCL Semivolatile Organic Compounds	Analytica	l Method:	SW-846 8270 C		Preparation Meth	nod: 3510C	
	Result	Units	RL F	lag Dil	Prepared	Analyzed	Analyst
Phenol	ND	ug/L	5.0	1	09/13/16	09/14/16 06:48	1055
Pyrene	ND	ug/L	5.0	1	09/13/16	09/14/16 06:48	1055
Pyridine	ND	ug/L	5.0	1	09/13/16	09/14/16 06:48	1055
2,4,5-Trichlorophenol	ND	ug/L	5.0	1	09/13/16	09/14/16 06:48	1055
2,4,6-Trichlorophenol	ND	ug/L	5.0	1	09/13/16	09/14/16 06:48	1055

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09/14/16 09/14/16 20:12 1033

CERTIFICATE OF ANALYSIS

No: 16090921

Icor Ltd., Middleburg, VA

September 16, 2016

Project Name: Robinson Terminal North Project Location: 500/501 N. Union St.

Zinc

Sample ID: M1Hpt-22 (1-2) Matrix: SOIL			e Sampled: e Received:			•	e ID: 1609092 [.] olids: 81	1-006
PP Metals	Analytical Method: SW-846 6020 A			Preparation Method: 3050B				
	Result	Units	RL	Flag Dil		Prepared	Analyzed	Analyst
Antimony	ND	mg/kg	2.6	1		09/14/16	09/14/16 20:12	2 1033
Arsenic	2,500	mg/kg	52	100)	09/14/16	09/15/16 15:15	5 1033
Beryllium	ND	mg/kg	2.6	1	l	09/14/16	09/14/16 20:12	2 1033
Cadmium	ND	mg/kg	2.6	1	l	09/14/16	09/14/16 20:12	2 1033
Chromium	22	mg/kg	2.6	1	l	09/14/16	09/14/16 20:12	2 1033
Copper	25	mg/kg	2.6	1		09/14/16	09/14/16 20:12	2 1033
Lead	69	mg/kg	2.6	1	l	09/14/16	09/14/16 20:12	2 1033
Mercury	0.26	mg/kg	0.10	1		09/14/16	09/14/16 20:12	2 1033
Nickel	22	mg/kg	2.6	1		09/14/16	09/14/16 20:12	2 1033
Selenium	ND	mg/kg	2.6	1	l	09/14/16	09/14/16 20:12	2 1033
Silver	ND	mg/kg	2.6	1		09/14/16	09/14/16 20:12	2 1033
Thallium	ND	mg/kg	2.1	1	I	09/14/16	09/14/16 20:12	2 1033

10

79

mg/kg

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CERTIFICATE OF ANALYSIS

No: 16090921

Icor Ltd., Middleburg, VA

September 16, 2016

Sample ID: M1Hpt-22 (1-2)		Date/Time	•			•	e ID: 16090921	l - 006
Matrix: SOIL		Date/Time I	Received:	09/09/2	016 16:20	% S	olids: 81	
Organochlorine Pesticides	Analytica	l Method: SV	V-846 8081	В		Preparation Meth	nod: SW3550C	
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
alpha-BHC	ND	ug/kg	4.9		1	09/12/16	09/14/16 22:31	1029
gamma-BHC (Lindane)	ND	ug/kg	4.9		1	09/12/16	09/14/16 22:31	1029
beta-BHC	ND	ug/kg	4.9		1	09/12/16	09/14/16 22:31	1029
delta-BHC	ND	ug/kg	4.9		1	09/12/16	09/14/16 22:31	1029
Heptachlor	ND	ug/kg	4.9		1	09/12/16	09/14/16 22:31	1029
Aldrin	ND	ug/kg	4.9		1	09/12/16	09/14/16 22:31	1029
Heptachlor epoxide	ND	ug/kg	4.9		1	09/12/16	09/14/16 22:31	1029
gamma-Chlordane	ND	ug/kg	4.9		1	09/12/16	09/14/16 22:31	1029
alpha-Chlordane	ND	ug/kg	4.9		1	09/12/16	09/14/16 22:31	1029
4,4-DDE	ND	ug/kg	4.9		1	09/12/16	09/14/16 22:31	1029
Endosulfan I	ND	ug/kg	4.9		1	09/12/16	09/14/16 22:31	1029
Dieldrin	ND	ug/kg	4.9		1	09/12/16	09/14/16 22:31	1029
Endrin	ND	ug/kg	4.9		1	09/12/16	09/14/16 22:31	1029
4,4-DDD	ND	ug/kg	4.9		1	09/12/16	09/14/16 22:31	1029
Endosulfan II	ND	ug/kg	4.9		1	09/12/16	09/14/16 22:31	1029
4,4-DDT	ND	ug/kg	4.9		1	09/12/16	09/14/16 22:31	1029
Endrin aldehyde	ND	ug/kg	4.9		1	09/12/16	09/14/16 22:31	1029
Methoxychlor	ND	ug/kg	4.9		1	09/12/16	09/14/16 22:31	1029
Endosulfan sulfate	ND	ug/kg	4.9		1	09/12/16	09/14/16 22:31	1029
Endrin ketone	ND	ug/kg	4.9		1	09/12/16	09/14/16 22:31	1029
Toxaphene	ND	ug/kg	120		1	09/12/16	09/14/16 22:31	1029
Chlordane	ND	ug/kg	120		1	09/12/16	09/14/16 22:31	1029

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090921

Icor Ltd., Middleburg, VA

September 16, 2016

Sample ID: M1Hpt-22 (1-2)		Date/Time	Sampled:	09/09/	2016 09:4	5 PSS Sample	e ID: 16090921	1-006	
Matrix: SOIL	1	Date/Time	Received:	09/09/	2016 16:20	0 % S	olids: 81		
Polychlorinated Biphenyls	Analytica	l Method: S'	W-846 8082	Α		Preparation Method			
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst	
PCB-1016	ND	mg/kg	0.061		1	09/12/16	09/12/16 17:11	1029	
PCB-1221	ND	mg/kg	0.061		1	09/12/16	09/12/16 17:11	1029	
PCB-1232	ND	mg/kg	0.061		1	09/12/16	09/12/16 17:11	1029	
PCB-1242	ND	mg/kg	0.061		1	09/12/16	09/12/16 17:11	1029	
PCB-1248	ND	mg/kg	0.061		1	09/12/16	09/12/16 17:11	1029	
PCB-1254	ND	mg/kg	0.061		1	09/12/16	09/12/16 17:11	1029	
PCB-1260	ND	mg/kg	0.061		1	09/12/16	09/12/16 17:11	1029	
Chlorinated Herbicides	Analytica	I Method: S'	W-846 8151	Α		Preparation Method: 8151A			
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst	
Dalapon	ND	ug/kg	600		10	09/12/16	09/14/16 00:56	1029	
Dicamba	ND	ug/kg	24		10	09/12/16	09/14/16 00:56	1029	
MCPP	ND	ug/kg	24,000		10	09/12/16	09/14/16 00:56	1029	
MCPA	ND	ug/kg	24,000		10	09/12/16	09/14/16 00:56	1029	
Dichloroprop	ND	ug/kg	240		10	09/12/16	09/14/16 00:56	1029	
2,4-D	ND	ug/kg	240		10	09/12/16	09/14/16 00:56	1029	
2,4,5-TP (Silvex)	ND	ug/kg	24		10	09/12/16	09/14/16 00:56	1029	
2,4,5-T	ND	ug/kg	24		10	09/12/16	09/14/16 00:56	1029	
Dinoseb	ND	ug/kg	120		10	09/12/16	09/14/16 00:56	1029	

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090921

Icor Ltd., Middleburg, VA

September 16, 2016

Sample ID: M1Hpt-22 (4-5)			•		2016 09:50	PSS Sample	e ID: 1609092 <i>1</i>	1-007
Matrix: SOIL	[Date/Time	Received:	09/09/	2016 16:20	% S	olids: 83	
Arsenic	Analytica	l Method: S	W-846 6020	Α	ı	Preparation Meth	nod: 3050B	
_	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Arsenic	810	mg/kg	46		100	09/14/16	09/15/16 15:22	1033
Organochlorine Pesticides	Analytica	l Method: S	:W-846 8081	В	ı	Preparation Meth	nod: SW3550C	
_	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
alpha-BHC	ND	ug/kg	4.7		1	09/12/16	09/14/16 17:52	1029
gamma-BHC (Lindane)	ND	ug/kg	4.7		1	09/12/16	09/14/16 17:52	1029
beta-BHC	ND	ug/kg	4.7		1	09/12/16	09/14/16 17:52	1029
delta-BHC	ND	ug/kg	4.7		1	09/12/16	09/14/16 17:52	1029
Heptachlor	ND	ug/kg	4.7		1	09/12/16	09/14/16 17:52	1029
Aldrin	ND	ug/kg	4.7		1	09/12/16	09/14/16 17:52	1029
Heptachlor epoxide	ND	ug/kg	4.7		1	09/12/16	09/14/16 17:52	1029
gamma-Chlordane	ND	ug/kg	4.7		1	09/12/16	09/14/16 17:52	1029
alpha-Chlordane	ND	ug/kg	4.7		1	09/12/16	09/14/16 17:52	1029
4,4-DDE	ND	ug/kg	4.7		1	09/12/16	09/14/16 17:52	1029
Endosulfan I	ND	ug/kg	4.7		1	09/12/16	09/14/16 17:52	1029
Dieldrin	ND	ug/kg	4.7		1	09/12/16	09/14/16 17:52	1029
Endrin	ND	ug/kg	4.7		1	09/12/16	09/14/16 17:52	1029
4,4-DDD	ND	ug/kg	4.7		1	09/12/16	09/14/16 17:52	1029
Endosulfan II	ND	ug/kg	4.7		1	09/12/16	09/14/16 17:52	1029
4,4-DDT	ND	ug/kg	4.7		1	09/12/16	09/14/16 17:52	1029
Endrin aldehyde	ND	ug/kg	4.7		1	09/12/16	09/14/16 17:52	1029
Methoxychlor	ND	ug/kg	4.7		1	09/12/16	09/14/16 17:52	1029
Endosulfan sulfate	ND	ug/kg	4.7		1	09/12/16	09/14/16 17:52	1029
Endrin ketone	ND	ug/kg	4.7		1	09/12/16	09/14/16 17:52	1029
Toxaphene	ND	ug/kg	120		1	09/12/16	09/14/16 17:52	1029
Chlordane	ND	ug/kg	120		1	09/12/16	09/14/16 17:52	1029

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090921

Icor Ltd., Middleburg, VA

September 16, 2016

0		D - 4 - /T:	0	00/00/	0040 00-5	0 0000	ID- 4000000	007
Sample ID: M1Hpt-22 (4-5) Matrix: SOIL			Sampled: Received:			-	e ID: 16090921 olids: 83	-007
Polychlorinated Biphenyls			W-846 8082		2010 10.2	Preparation Meth	od: SW3550C	
	Result	Units	RL	Flag	Dil	Prepared		Analyst
PCB-1016	ND	mg/kg	0.059		1	09/12/16	09/12/16 17:40	1029
PCB-1221	ND	mg/kg	0.059		1	09/12/16	09/12/16 17:40	1029
PCB-1232	ND	mg/kg	0.059		1	09/12/16	09/12/16 17:40	1029
PCB-1242	ND	mg/kg	0.059		1	09/12/16	09/12/16 17:40	1029
PCB-1248	ND	mg/kg	0.059		1	09/12/16	09/12/16 17:40	1029
PCB-1254	ND	mg/kg	0.059		1	09/12/16	09/12/16 17:40	1029
PCB-1260	ND	mg/kg	0.059		1	09/12/16	09/12/16 17:40	1029
Chlorinated Herbicides	Analytica	l Method: S	W-846 8151	Α		Preparation Meth	nod: 8151A	
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Dalapon	Result	Units ug/kg	RL 580	Flag	Dil	Prepared 09/12/16	Analyzed 09/14/16 01:28	
Dalapon Dicamba				Flag		-		1029
·	ND	ug/kg	580	Flag	10	09/12/16	09/14/16 01:28	1029 1029
Dicamba	ND ND	ug/kg ug/kg	580 23	Flag	10 10	09/12/16 09/12/16	09/14/16 01:28 09/14/16 01:28	1029 1029 1029
Dicamba MCPP	ND ND ND	ug/kg ug/kg ug/kg	580 23 23,000	Flag	10 10 10	09/12/16 09/12/16 09/12/16	09/14/16 01:28 09/14/16 01:28 09/14/16 01:28	1029 1029 1029 1029
Dicamba MCPP MCPA	ND ND ND	ug/kg ug/kg ug/kg ug/kg	580 23 23,000 23,000	Flag	10 10 10 10	09/12/16 09/12/16 09/12/16 09/12/16	09/14/16 01:28 09/14/16 01:28 09/14/16 01:28 09/14/16 01:28	1029 1029 1029 1029 1029
Dicamba MCPP MCPA Dichloroprop	ND ND ND ND	ug/kg ug/kg ug/kg ug/kg ug/kg	580 23 23,000 23,000 230	Flag	10 10 10 10 10	09/12/16 09/12/16 09/12/16 09/12/16 09/12/16	09/14/16 01:28 09/14/16 01:28 09/14/16 01:28 09/14/16 01:28 09/14/16 01:28	1029 1029 1029 1029 1029 1029
Dicamba MCPP MCPA Dichloroprop 2,4-D	ND ND ND ND ND	ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg	580 23 23,000 23,000 230 230	Flag	10 10 10 10 10 10	09/12/16 09/12/16 09/12/16 09/12/16 09/12/16	09/14/16 01:28 09/14/16 01:28 09/14/16 01:28 09/14/16 01:28 09/14/16 01:28 09/14/16 01:28	1029 1029 1029 1029 1029 1029 1029
Dicamba MCPP MCPA Dichloroprop 2,4-D 2,4,5-TP (Silvex)	ND ND ND ND ND ND	ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg	580 23 23,000 23,000 230 230 23	Flag	10 10 10 10 10 10	09/12/16 09/12/16 09/12/16 09/12/16 09/12/16 09/12/16	09/14/16 01:28 09/14/16 01:28 09/14/16 01:28 09/14/16 01:28 09/14/16 01:28 09/14/16 01:28	1029 1029 1029 1029 1029 1029 1029 1029

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090921

Icor Ltd., Middleburg, VA September 16, 2016

Sample ID: M1Hpt-22 (19-20) Matrix: SOIL			Sampled: 09/09/ Received: 09/09/		<u>-</u>	e ID: 1609092 Solids: 81	1-008
Total Petroleum Hydrocarbons - DRO	Analytica	I Method: S\	N-846 8015 C		Preparation Met	hod: SW3550C	
_	Result	Units	RL Flag	Dil	Prepared	Analyzed	Analyst
TPH-DRO (Diesel Range Organics)	71	mg/kg	12	1	09/14/16	09/16/16 04:18	3 1045
Total Petroleum Hydrocarbons-GRO	Analytica	I Method: S\	W-846 8015C		Preparation Met	hod: 5030	
_	Result	Units	RL Flag	Dil	Prepared	Analyzed	Analyst
TPH-GRO (Gasoline Range Organics)	2,500	ug/kg	120	1	09/12/16	09/13/16 02:30	0 1035

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090921

Icor Ltd., Middleburg, VA

September 16, 2016

Sample ID: M1Hpt-22 (19-20) Matrix: SOIL			-	09/09/2016 10:10 09/09/2016 16:20	-	e ID: 1609092 olids: 81	1-008
TCL Volatile Organic Compounds			SW-846 8260		Preparation Met		
	Result	Units	DI	Flag Dil	Prepared	Analyzed	Analyst
Acetone	ND	ug/kg	24,000	1000	09/15/16		
Benzene	ND	ug/kg	6,000	1000	09/15/16		
Bromochloromethane	ND	ug/kg	6,000	1000	09/15/16		
Bromodichloromethane	ND	ug/kg	6,000	1000	09/15/16	09/16/16 10:11	I 1011
Bromoform	ND	ug/kg	6,000	1000	09/15/16	09/16/16 10:11	I 1011
Bromomethane	ND	ug/kg	6,000	1000	09/15/16	09/16/16 10:11	I 1011
2-Butanone (MEK)	ND	ug/kg	24,000	1000	09/15/16	09/16/16 10:11	I 1011
Carbon Disulfide	ND	ug/kg	12,000	1000	09/15/16	09/16/16 10:11	I 1011
Carbon Tetrachloride	ND	ug/kg	6,000	1000	09/15/16	09/16/16 10:11	I 1011
Chlorobenzene	ND	ug/kg	6,000	1000	09/15/16	09/16/16 10:11	I 1011
Chloroethane	ND	ug/kg	6,000	1000	09/15/16	09/16/16 10:11	I 1011
Chloroform	ND	ug/kg	6,000	1000	09/15/16	09/16/16 10:11	I 1011
Chloromethane	ND	ug/kg	6,000	1000	09/15/16	09/16/16 10:11	I 1011
Cyclohexane	35,000	ug/kg	24,000	1000	09/15/16	09/16/16 10:11	I 1011
1,2-Dibromo-3-Chloropropane	ND	ug/kg	48,000	1000	09/15/16	09/16/16 10:11	I 1011
Dibromochloromethane	ND	ug/kg	6,000	1000	09/15/16	09/16/16 10:11	I 1011
1,2-Dibromoethane (EDB)	ND	ug/kg	6,000	1000	09/15/16	09/16/16 10:11	I 1011
1,2-Dichlorobenzene	ND	ug/kg	6,000	1000	09/15/16	09/16/16 10:11	I 1011
1,3-Dichlorobenzene	ND	ug/kg	6,000	1000	09/15/16	09/16/16 10:11	I 1011
1,4-Dichlorobenzene	ND	ug/kg	6,000	1000	09/15/16	09/16/16 10:11	I 1011
Dichlorodifluoromethane	ND	ug/kg	6,000	1000	09/15/16	09/16/16 10:11	I 1011
1,1-Dichloroethane	ND	ug/kg	6,000	1000	09/15/16	09/16/16 10:11	I 1011
1,2-Dichloroethane	ND	ug/kg	6,000	1000	09/15/16	09/16/16 10:11	I 1011
1,1-Dichloroethene	ND	ug/kg	6,000	1000	09/15/16	09/16/16 10:11	I 1011
cis-1,2-Dichloroethene	ND	ug/kg	6,000	1000	09/15/16	09/16/16 10:11	I 1011
1,2-Dichloropropane	ND	ug/kg	6,000	1000	09/15/16	09/16/16 10:11	l 1011
cis-1,3-Dichloropropene	ND	ug/kg	6,000	1000	09/15/16	09/16/16 10:11	I 1011
trans-1,2-Dichloroethene	ND	ug/kg	6,000	1000	09/15/16	09/16/16 10:11	I 1011
trans-1,3-Dichloropropene	ND	ug/kg	6,000	1000	09/15/16	09/16/16 10:11	l 1011
Ethylbenzene	15,000	ug/kg	6,000	1000	09/15/16	09/16/16 10:11	I 1011

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090921

Icor Ltd., Middleburg, VA

September 16, 2016

Sample ID: M1Hpt-22 (19-20)		Date/Time	e Sampled:	09/09/2016 10:	10 PSS Sampl	e ID: 1609092 ²	l -00 8
Matrix: SOIL		Date/Time	Received:	09/09/2016 16:2	20 % S	olids: 81	
TCL Volatile Organic Compounds	Analytica	l Method: \$	SW-846 8260	В	Preparation Met	hod: 5035A	
_	Result	Units	RL	Flag Dil	Prepared	Analyzed	Analyst
2-Hexanone	ND	ug/kg	24,000	1000	09/15/16	09/16/16 10:11	1011
Isopropylbenzene	ND	ug/kg	6,000	1000	09/15/16	09/16/16 10:11	1011
Methyl Acetate	ND	ug/kg	24,000	1000	09/15/16	09/16/16 10:11	1011
Methylcyclohexane	200,000	ug/kg	24,000	1000	09/15/16	09/16/16 10:11	1011
Methylene Chloride	ND	ug/kg	6,000	1000	09/15/16	09/16/16 10:11	1011
4-Methyl-2-Pentanone	ND	ug/kg	24,000	1000	09/15/16	09/16/16 10:11	1011
Methyl-t-butyl ether	ND	ug/kg	6,000	1000	09/15/16	09/16/16 10:11	1011
Naphthalene	46,000	ug/kg	6,000	1000	09/15/16	09/16/16 10:11	1011
Styrene	ND	ug/kg	6,000	1000	09/15/16	09/16/16 10:11	1011
1,1,2,2-Tetrachloroethane	ND	ug/kg	6,000	1000	09/15/16	09/16/16 10:11	1011
Tetrachloroethene	ND	ug/kg	6,000	1000	09/15/16	09/16/16 10:11	1011
Toluene	ND	ug/kg	6,000	1000	09/15/16	09/16/16 10:11	1011
1,2,3-Trichlorobenzene	ND	ug/kg	6,000	1000	09/15/16	09/16/16 10:11	1011
1,2,4-Trichlorobenzene	ND	ug/kg	6,000	1000	09/15/16	09/16/16 10:11	1011
1,1,1-Trichloroethane	ND	ug/kg	6,000	1000	09/15/16	09/16/16 10:11	1011
1,1,2-Trichloroethane	ND	ug/kg	6,000	1000	09/15/16	09/16/16 10:11	1011
Trichloroethene	ND	ug/kg	6,000	1000	09/15/16	09/16/16 10:11	1011
Trichlorofluoromethane	ND	ug/kg	6,000	1000	09/15/16	09/16/16 10:11	1011
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	ug/kg	6,000	1000	09/15/16	09/16/16 10:11	1011
Vinyl Chloride	ND	ug/kg	6,000	1000	09/15/16	09/16/16 10:11	1011
m,p-Xylenes	18,000	ug/kg	12,000	1000	09/15/16	09/16/16 10:11	1011
o-Xylene	7,300	ug/kg	6,000	1000	09/15/16	09/16/16 10:11	1011

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090921

Icor Ltd., Middleburg, VA September 16, 2016

Sample ID: M1Hpt-22 (24-25)		Date/Time	Sampled: 09/09/	2016 10:20	PSS Sample	e ID: 1609092	1-009
Matrix: SOIL	[Date/Time I	Received: 09/09/	2016 16:20) % S	olids: 81	
Total Petroleum Hydrocarbons - DRO	Analytica	l Method: SV	V-846 8015 C		Preparation Meth	nod: SW3550C	
_	Result	Units	RL Flag	Dil	Prepared	Analyzed	Analyst
TPH-DRO (Diesel Range Organics)	ND	mg/kg	12	1	09/14/16	09/16/16 04:43	3 1045
Total Petroleum Hydrocarbons-GRO	Analytica	l Method: SV	V-846 8015C		Preparation Meth	nod: 5030	
_	Result	Units	RL Flag	Dil	Prepared	Analyzed	Analyst
TPH-GRO (Gasoline Range Organics)	ND	ug/kg	120	1	09/12/16	09/13/16 03:00	1035

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090921

Icor Ltd., Middleburg, VA

September 16, 2016

Sample ID: M1Hpt-22 (24-25)			-	09/09/2016		-
Matrix: SOIL				09/09/2016		
TCL Volatile Organic Compounds	Analytica	l Method: SV	w-846 8260	В	Preparation Method: 5035A	Preparation Method: 5035A
_	Result	Units	RL	Flag Dil	Prepared Analyzed Analy	Prepared Analyzed
Acetone	ND	ug/kg	22	1	09/15/16 09/16/16 09:32 1012	09/15/16 09/16/16 09
Benzene	ND	ug/kg	5.5	1	09/15/16 09/16/16 09:32 1012	09/15/16 09/16/16 09
Bromochloromethane	ND	ug/kg	5.5	1	09/15/16 09/16/16 09:32 1012	09/15/16 09/16/16 09
Bromodichloromethane	ND	ug/kg	5.5	1	09/15/16 09/16/16 09:32 1012	09/15/16 09/16/16 09
Bromoform	ND	ug/kg	5.5	1	09/15/16 09/16/16 09:32 1012	09/15/16 09/16/16 09
Bromomethane	ND	ug/kg	5.5	1	09/15/16 09/16/16 09:32 1012	09/15/16 09/16/16 09
2-Butanone (MEK)	ND	ug/kg	22	1	09/15/16 09/16/16 09:32 1012	09/15/16 09/16/16 09
Carbon Disulfide	ND	ug/kg	11	1	09/15/16 09/16/16 09:32 1017	09/15/16 09/16/16 09
Carbon Tetrachloride	ND	ug/kg	5.5	1	09/15/16 09/16/16 09:32 1017	09/15/16 09/16/16 09
Chlorobenzene	ND	ug/kg	5.5	1	09/15/16 09/16/16 09:32 1012	09/15/16 09/16/16 09
Chloroethane	ND	ug/kg	5.5	1	09/15/16 09/16/16 09:32 1012	09/15/16 09/16/16 09
Chloroform	ND	ug/kg	5.5	1	09/15/16 09/16/16 09:32 1012	09/15/16 09/16/16 09
Chloromethane	ND	ug/kg	5.5	1	09/15/16 09/16/16 09:32 1012	09/15/16 09/16/16 09
Cyclohexane	ND	ug/kg	22	1	09/15/16 09/16/16 09:32 1012	09/15/16 09/16/16 09
1,2-Dibromo-3-Chloropropane	ND	ug/kg	44	1	09/15/16 09/16/16 09:32 1012	09/15/16 09/16/16 09
Dibromochloromethane	ND	ug/kg	5.5	1	09/15/16 09/16/16 09:32 1012	09/15/16 09/16/16 09
1,2-Dibromoethane (EDB)	ND	ug/kg	5.5	1	09/15/16 09/16/16 09:32 1017	09/15/16 09/16/16 09
1,2-Dichlorobenzene	ND	ug/kg	5.5	1	09/15/16 09/16/16 09:32 1012	09/15/16 09/16/16 09
1,3-Dichlorobenzene	ND	ug/kg	5.5	1	09/15/16 09/16/16 09:32 1012	09/15/16 09/16/16 09
1,4-Dichlorobenzene	ND	ug/kg	5.5	1	09/15/16 09/16/16 09:32 1012	09/15/16 09/16/16 09
Dichlorodifluoromethane	ND	ug/kg	5.5	1	09/15/16 09/16/16 09:32 1012	09/15/16 09/16/16 09
1,1-Dichloroethane	ND	ug/kg	5.5	1	09/15/16 09/16/16 09:32 1012	09/15/16 09/16/16 09
1,2-Dichloroethane	ND	ug/kg	5.5	1	09/15/16 09/16/16 09:32 1013	09/15/16 09/16/16 09
1,1-Dichloroethene	ND	ug/kg	5.5	1	09/15/16 09/16/16 09:32 1017	09/15/16 09/16/16 09
1,2-Dichloropropane	ND	ug/kg	5.5	1	09/15/16 09/16/16 09:32 1013	09/15/16 09/16/16 09
cis-1,2-Dichloroethene	ND	ug/kg	5.5	1	09/15/16 09/16/16 09:32 1012	09/15/16 09/16/16 09
cis-1,3-Dichloropropene	ND	ug/kg	5.5	1	09/15/16 09/16/16 09:32 1012	09/15/16 09/16/16 09
trans-1,2-Dichloroethene	ND	ug/kg	5.5	1	09/15/16 09/16/16 09:32 1012	09/15/16 09/16/16 09
trans-1,3-Dichloropropene	ND	ug/kg	5.5	1	09/15/16 09/16/16 09:32 1012	09/15/16 09/16/16 09
Ethylbenzene	ND	ug/kg	5.5	1	09/15/16 09/16/16 09:32 1012	09/15/16 09/16/16 09

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090921

Icor Ltd., Middleburg, VA

September 16, 2016

Sample ID: M1Hpt-22 (24-25)			-	09/09/2016 10:		e ID: 16090921	-009
Matrix: SOIL		Date/Time	e Received:	09/09/2016 16:	20 % S	iolids: 81	
TCL Volatile Organic Compounds	Analytica	l Method:	SW-846 8260	В	Preparation Metl	nod: 5035A	
	Result	Units	RL	Flag Dil	Prepared	Analyzed	Analyst
2-Hexanone	ND	ug/kg	22	1	09/15/16	09/16/16 09:32	1011
Isopropylbenzene	ND	ug/kg	5.5	1	09/15/16	09/16/16 09:32	1011
Methyl Acetate	ND	ug/kg	22	1	09/15/16	09/16/16 09:32	1011
Methylcyclohexane	ND	ug/kg	22	1	09/15/16	09/16/16 09:32	1011
Methylene Chloride	ND	ug/kg	5.5	1	09/15/16	09/16/16 09:32	1011
4-Methyl-2-Pentanone	ND	ug/kg	22	1	09/15/16	09/16/16 09:32	1011
Methyl-t-butyl ether	ND	ug/kg	5.5	1	09/15/16	09/16/16 09:32	1011
Naphthalene	ND	ug/kg	5.5	1	09/15/16	09/16/16 09:32	1011
Styrene	ND	ug/kg	5.5	1	09/15/16	09/16/16 09:32	1011
1,1,2,2-Tetrachloroethane	ND	ug/kg	5.5	1	09/15/16	09/16/16 09:32	1011
Tetrachloroethene	ND	ug/kg	5.5	1	09/15/16	09/16/16 09:32	1011
Toluene	ND	ug/kg	5.5	1	09/15/16	09/16/16 09:32	1011
1,2,3-Trichlorobenzene	ND	ug/kg	5.5	1	09/15/16	09/16/16 09:32	1011
1,2,4-Trichlorobenzene	ND	ug/kg	5.5	1	09/15/16	09/16/16 09:32	1011
1,1,1-Trichloroethane	ND	ug/kg	5.5	1	09/15/16	09/16/16 09:32	1011
1,1,2-Trichloroethane	ND	ug/kg	5.5	1	09/15/16	09/16/16 09:32	1011
Trichloroethene	ND	ug/kg	5.5	1	09/15/16	09/16/16 09:32	1011
Trichlorofluoromethane	ND	ug/kg	5.5	1	09/15/16	09/16/16 09:32	1011
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	ug/kg	5.5	1	09/15/16	09/16/16 09:32	1011
Vinyl Chloride	ND	ug/kg	5.5	1	09/15/16	09/16/16 09:32	1011
m,p-Xylenes	ND	ug/kg	11	1	09/15/16	09/16/16 09:32	1011
o-Xylene	ND	ug/kg	5.5	1	09/15/16	09/16/16 09:32	1011

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090921

Icor Ltd., Middleburg, VA

September 16, 2016

Sample ID: M1Hpt-22 (24-25) Matrix: SOIL			Sampled:			-	e ID: 1609092 [,] olids: 81	1-009
TCL Semivolatile Organic Compounds			Received: W-846 8270			% 5 Preparation Meth		
	Result	Units	RL	Flag [Dil	Prepared	Analyzed	Analyst
Acenaphthene	ND	ug/kg	210		1	09/12/16	09/12/16 17:14	1055
Acenaphthylene	ND	ug/kg	210		1	09/12/16	09/12/16 17:14	1055
Acetophenone	ND	ug/kg	210		1	09/12/16	09/12/16 17:14	1055
Anthracene	ND	ug/kg	210		1	09/12/16	09/12/16 17:14	1055
Atrazine	ND	ug/kg	210		1	09/12/16	09/12/16 17:14	1055
Benzo(a)anthracene	ND	ug/kg	210		1	09/12/16	09/12/16 17:14	1055
Benzo(a)pyrene	ND	ug/kg	210		1	09/12/16	09/12/16 17:14	1055
Benzo(b)fluoranthene	ND	ug/kg	210		1	09/12/16	09/12/16 17:14	1055
Benzo(g,h,i)perylene	ND	ug/kg	210		1	09/12/16	09/12/16 17:14	1055
Benzo(k)fluoranthene	ND	ug/kg	210		1	09/12/16	09/12/16 17:14	1055
Biphenyl (Diphenyl)	ND	ug/kg	210		1	09/12/16	09/12/16 17:14	1055
Butyl benzyl phthalate	ND	ug/kg	210		1	09/12/16	09/12/16 17:14	1055
bis(2-chloroethoxy) methane	ND	ug/kg	210		1	09/12/16	09/12/16 17:14	1055
bis(2-chloroethyl) ether	ND	ug/kg	210		1	09/12/16	09/12/16 17:14	1055
bis(2-chloroisopropyl) ether	ND	ug/kg	210		1	09/12/16	09/12/16 17:14	1055
bis(2-ethylhexyl) phthalate	ND	ug/kg	210		1	09/12/16	09/12/16 17:14	1055
4-Bromophenylphenyl ether	ND	ug/kg	210		1	09/12/16	09/12/16 17:14	1055
Di-n-butyl phthalate	ND	ug/kg	210		1	09/12/16	09/12/16 17:14	1055
Carbazole	ND	ug/kg	210		1	09/12/16	09/12/16 17:14	1055
Caprolactam	ND	ug/kg	210		1	09/12/16	09/12/16 17:14	1055
4-Chloro-3-methyl phenol	ND	ug/kg	210		1	09/12/16	09/12/16 17:14	1055
4-Chloroaniline	ND	ug/kg	210		1	09/12/16	09/12/16 17:14	1055
2-Chloronaphthalene	ND	ug/kg	210		1	09/12/16	09/12/16 17:14	1055
2-Chlorophenol	ND	ug/kg	210		1	09/12/16	09/12/16 17:14	1055
4-Chlorophenyl Phenyl ether	ND	ug/kg	210		1	09/12/16	09/12/16 17:14	1055
Chrysene	ND	ug/kg	210		1	09/12/16	09/12/16 17:14	1055
Dibenz(a,h)Anthracene	ND	ug/kg	210		1	09/12/16	09/12/16 17:14	1055
Dibenzofuran	ND	ug/kg	210		1	09/12/16	09/12/16 17:14	1055
3,3-Dichlorobenzidine	ND	ug/kg	210		1	09/12/16	09/12/16 17:14	1055
2,4-Dichlorophenol	ND	ug/kg	210		1	09/12/16	09/12/16 17:14	1055

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090921

Icor Ltd., Middleburg, VA

September 16, 2016

Sample ID: M1Hpt-22 (24-25) Matrix: SOIL			Sampled:			-	e ID: 16090921 olids: 81	1-009
TCL Semivolatile Organic Compounds			W-846 8270			Preparation Meth		
	Result	Units	RL	Flag [Dil	Prepared	Analyzed	Analyst
Diethyl phthalate	ND	ug/kg	210		1	09/12/16	09/12/16 17:14	1055
Dimethyl phthalate	ND	ug/kg	210		1	09/12/16	09/12/16 17:14	1055
2,4-Dimethylphenol	ND	ug/kg	210		1	09/12/16	09/12/16 17:14	1055
4,6-Dinitro-2-methyl phenol	ND	ug/kg	210		1	09/12/16	09/12/16 17:14	1055
2,4-Dinitrophenol	ND	ug/kg	410		1	09/12/16	09/12/16 17:14	1055
2,4-Dinitrotoluene	ND	ug/kg	210		1	09/12/16	09/12/16 17:14	1055
2,6-Dinitrotoluene	ND	ug/kg	210		1	09/12/16	09/12/16 17:14	1055
Fluoranthene	ND	ug/kg	210		1	09/12/16	09/12/16 17:14	1055
Fluorene	ND	ug/kg	210		1	09/12/16	09/12/16 17:14	1055
Hexachlorobenzene	ND	ug/kg	210		1	09/12/16	09/12/16 17:14	1055
Hexachlorobutadiene	ND	ug/kg	210		1	09/12/16	09/12/16 17:14	1055
Hexachlorocyclopentadiene	ND	ug/kg	210		1	09/12/16	09/12/16 17:14	1055
Hexachloroethane	ND	ug/kg	210		1	09/12/16	09/12/16 17:14	1055
Indeno(1,2,3-c,d)Pyrene	ND	ug/kg	210		1	09/12/16	09/12/16 17:14	1055
Isophorone	ND	ug/kg	210		1	09/12/16	09/12/16 17:14	1055
2-Methylnaphthalene	ND	ug/kg	210		1	09/12/16	09/12/16 17:14	1055
2-Methyl phenol	ND	ug/kg	210		1	09/12/16	09/12/16 17:14	1055
3&4-Methylphenol	ND	ug/kg	210		1	09/12/16	09/12/16 17:14	1055
Naphthalene	ND	ug/kg	210		1	09/12/16	09/12/16 17:14	1055
2-Nitroaniline	ND	ug/kg	210		1	09/12/16	09/12/16 17:14	1055
3-Nitroaniline	ND	ug/kg	210		1	09/12/16	09/12/16 17:14	1055
4-Nitroaniline	ND	ug/kg	210		1	09/12/16	09/12/16 17:14	1055
Nitrobenzene	ND	ug/kg	210		1	09/12/16	09/12/16 17:14	1055
2-Nitrophenol	ND	ug/kg	210		1	09/12/16	09/12/16 17:14	1055
4-Nitrophenol	ND	ug/kg	210		1	09/12/16	09/12/16 17:14	1055
N-Nitrosodi-n-propyl amine	ND	ug/kg	210		1	09/12/16	09/12/16 17:14	1055
N-Nitrosodiphenylamine	ND	ug/kg	210		1	09/12/16	09/12/16 17:14	1055
Di-n-octyl phthalate	ND	ug/kg	210		1	09/12/16	09/12/16 17:14	1055
Pentachlorophenol	ND	ug/kg	210		1	09/12/16	09/12/16 17:14	1055
Phenanthrene	ND	ug/kg	210		1	09/12/16	09/12/16 17:14	1055

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090921

Icor Ltd., Middleburg, VA

September 16, 2016

Sample ID: M1Hpt-22 (24-25) Matrix: SOIL			•)9/09/2016 10:)9/09/2016 16:		e ID: 1609092 olids: 81	1-009
TCL Semivolatile Organic Compounds	Analytica	l Method: S\	N-846 8270 C		Preparation Meth	nod: SW3550C	
	Result	Units	RL	Flag Dil	Prepared	Analyzed	Analyst
Phenol	ND	ug/kg	210	1	09/12/16	09/12/16 17:1	4 1055
Pyrene	ND	ug/kg	210	1	09/12/16	09/12/16 17:1	4 1055
Pyridine	ND	ug/kg	210	1	09/12/16	09/12/16 17:1	4 1055
2,4,5-Trichlorophenol	ND	ug/kg	210	1	09/12/16	09/12/16 17:1	4 1055
2,4,6-Trichlorophenol	ND	ug/kg	210	1	09/12/16	09/12/16 17:1	4 1055

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090921

Icor Ltd., Middleburg, VA September 16, 2016

Sample ID: M1Hpt-22 GW (25-28.5 Matrix: GROUND WATER	·		e Sampled: Received:			•	e ID: 1609092	21-010
Oil and Grease	Analytica	l Method: l	EPA 1664 A					
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Oil & Grease, Total Recovered	ND	mg/L	2.2		1	09/15/16	09/15/16 13:1	14 1022
Total Petroleum Hydrocarbons	Analytica	l Method: I	EPA 1664 A					
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH	ND	mg/L	2.2		1	09/15/16	09/15/16 12:5	59 1022
Total Petroleum Hydrocarbons - DRO	Analytica	l Method: \$	SW-846 8015	С		Preparation Met	nod: 3510C	
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-DRO (Diesel Range Organics)	ND	mg/L	0.10		1	09/14/16	09/15/16 18:4	12 1045
Total Petroleum Hydrocarbons-GRO	Analytica	l Method: \$	SW-846 8015	С		Preparation Met	nod: 5030B	
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-GRO (Gasoline Range Organics)	ND	ug/L	100		1	09/15/16	09/15/16 13:4	15 1035

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090921

Icor Ltd., Middleburg, VA

September 16, 2016

Sample ID: M1Hpt-22 GW (25-28.5)	Date/Time Sampled: 09/09/2016 12:	10 PSS Sample ID: 16090921-010
Matrix: GROUND WATER	Date/Time Received: 09/09/2016 16:	20
TCL Volatile Organic Compounds	Analytical Method: SW-846 8260 B	Preparation Method: 5030B

_	Result	Units	RL	Flag Dil	Prepared	Analyzed	Analyst
Acetone	ND	ug/L	10	1	09/14/16	09/14/16 03:59	1011
Benzene	ND	ug/L	1.0	1	09/14/16	09/14/16 03:59	1011
Bromochloromethane	ND	ug/L	1.0	1	09/14/16	09/14/16 03:59	1011
Bromodichloromethane	ND	ug/L	1.0	1	09/14/16	09/14/16 03:59	1011
Bromoform	ND	ug/L	5.0	1	09/14/16	09/14/16 03:59	1011
Bromomethane	ND	ug/L	1.0	1	09/14/16	09/14/16 03:59	1011
2-Butanone (MEK)	ND	ug/L	10	1	09/14/16	09/14/16 03:59	1011
Carbon Disulfide	ND	ug/L	10	1	09/14/16	09/14/16 03:59	1011
Carbon Tetrachloride	ND	ug/L	1.0	1	09/14/16	09/14/16 03:59	1011
Chlorobenzene	ND	ug/L	1.0	1	09/14/16	09/14/16 03:59	1011
Chloroethane	ND	ug/L	1.0	1	09/14/16	09/14/16 03:59	1011
Chloroform	ND	ug/L	1.0	1	09/14/16	09/14/16 03:59	1011
Chloromethane	ND	ug/L	1.0	1	09/14/16	09/14/16 03:59	1011
Cyclohexane	ND	ug/L	10	1	09/14/16	09/14/16 03:59	1011
1,2-Dibromo-3-Chloropropane	ND	ug/L	10	1	09/14/16	09/14/16 03:59	1011
Dibromochloromethane	ND	ug/L	1.0	1	09/14/16	09/14/16 03:59	1011
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1	09/14/16	09/14/16 03:59	1011
1,2-Dichlorobenzene	ND	ug/L	1.0	1	09/14/16	09/14/16 03:59	1011
1,3-Dichlorobenzene	ND	ug/L	1.0	1	09/14/16	09/14/16 03:59	1011
Dichlorodifluoromethane	ND	ug/L	1.0	1	09/14/16	09/14/16 03:59	1011
1,4-Dichlorobenzene	ND	ug/L	1.0	1	09/14/16	09/14/16 03:59	1011
1,1-Dichloroethane	ND	ug/L	1.0	1	09/14/16	09/14/16 03:59	1011
1,2-Dichloroethane	ND	ug/L	1.0	1	09/14/16	09/14/16 03:59	1011
1,1-Dichloroethene	ND	ug/L	1.0	1	09/14/16	09/14/16 03:59	1011
cis-1,2-Dichloroethene	ND	ug/L	1.0	1	09/14/16	09/14/16 03:59	1011
1,2-Dichloropropane	ND	ug/L	1.0	1	09/14/16	09/14/16 03:59	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0	1	09/14/16	09/14/16 03:59	1011
trans-1,3-Dichloropropene	ND	ug/L	1.0	1	09/14/16	09/14/16 03:59	1011
trans-1,2-Dichloroethene	ND	ug/L	1.0	1	09/14/16	09/14/16 03:59	1011
Ethylbenzene	ND	ug/L	1.0	1	09/14/16	09/14/16 03:59	1011

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090921

Icor Ltd., Middleburg, VA

September 16, 2016

Sample ID: M1Hpt-22 GW (25-28.5)	Date/Time Sampled: 09/09/2016 12:10	PSS Sample ID: 16090921-010
Matrix: GROUND WATER	Date/Time Received: 09/09/2016 16:20	

TCL Volatile Organic Compounds	Analytica	I Method: S\	N-846 8260 B		Preparation Met	nod: 5030B	
_	Result	Units	RL Fla	ag Dil	Prepared	Analyzed	Analyst
2-Hexanone	ND	ug/L	10	1	09/14/16	09/14/16 03:59	9 1011
Isopropylbenzene	ND	ug/L	1.0	1	09/14/16	09/14/16 03:59	9 1011
Methyl Acetate	ND	ug/L	10	1	09/14/16	09/14/16 03:59	9 1011
Methylcyclohexane	ND	ug/L	10	1	09/14/16	09/14/16 03:59	9 1011
Methylene Chloride	ND	ug/L	1.0	1	09/14/16	09/14/16 03:59	9 1011
4-Methyl-2-Pentanone	ND	ug/L	5.0	1	09/14/16	09/14/16 03:59	9 1011
Methyl-t-butyl ether	4.8	ug/L	1.0	1	09/14/16	09/14/16 03:59	9 1011
Naphthalene	ND	ug/L	1.0	1	09/14/16	09/14/16 03:59	9 1011
Styrene	ND	ug/L	1.0	1	09/14/16	09/14/16 03:59	9 1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1	09/14/16	09/14/16 03:59	9 1011
Tetrachloroethene	ND	ug/L	1.0	1	09/14/16	09/14/16 03:59	9 1011
Toluene	ND	ug/L	1.0	1	09/14/16	09/14/16 03:59	9 1011
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1	09/14/16	09/14/16 03:59	9 1011
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1	09/14/16	09/14/16 03:59	9 1011
1,1,1-Trichloroethane	ND	ug/L	1.0	1	09/14/16	09/14/16 03:59	9 1011
Trichloroethene	ND	ug/L	1.0	1	09/14/16	09/14/16 03:59	9 1011
1,1,2-Trichloroethane	ND	ug/L	1.0	1	09/14/16	09/14/16 03:59	9 1011
Trichlorofluoromethane	ND	ug/L	5.0	1	09/14/16	09/14/16 03:59	9 1011
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	ug/L	1.0	1	09/14/16	09/14/16 03:59	9 1011
Vinyl Chloride	ND	ug/L	1.0	1	09/14/16	09/14/16 03:59	9 1011
m,p-Xylenes	ND	ug/L	2.0	1	09/14/16	09/14/16 03:59	9 1011
o-Xylene	ND	ug/L	1.0	1	09/14/16	09/14/16 03:59	9 1011

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090921

Icor Ltd., Middleburg, VA

September 16, 2016

Sample ID: M1Hpt-22 GW (25-28.5) Matrix: GROUND WATER			e Sampled: e Received:			•	e ID: 1609092 [,]	1-010
TCL Semivolatile Organic Compounds			SW-846 8270			Preparation Metl	nod: 3510C	
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acenaphthene	ND	ug/L	5.0		1	09/13/16	09/14/16 07:16	1055
Acenaphthylene	ND	ug/L	5.0		1	09/13/16	09/14/16 07:16	1055
Acetophenone	ND	ug/L	5.0		1	09/13/16	09/14/16 07:16	1055
Anthracene	ND	ug/L	5.0		1	09/13/16	09/14/16 07:16	1055
Atrazine	ND	ug/L	5.0		1	09/13/16	09/14/16 07:16	1055
Benzo(a)anthracene	ND	ug/L	5.0		1	09/13/16	09/14/16 07:16	1055
Benzo(a)pyrene	ND	ug/L	5.0		1	09/13/16	09/14/16 07:16	1055
Benzo(b)fluoranthene	ND	ug/L	5.0		1	09/13/16	09/14/16 07:16	1055
Benzo(g,h,i)perylene	ND	ug/L	5.0		1	09/13/16	09/14/16 07:16	1055
Benzo(k)fluoranthene	ND	ug/L	5.0		1	09/13/16	09/14/16 07:16	1055
Biphenyl (Diphenyl)	ND	ug/L	5.0		1	09/13/16	09/14/16 07:16	1055
Butyl benzyl phthalate	ND	ug/L	5.0		1	09/13/16	09/14/16 07:16	1055
bis(2-chloroethoxy) methane	ND	ug/L	5.0		1	09/13/16	09/14/16 07:16	1055
bis(2-chloroethyl) ether	ND	ug/L	5.0		1	09/13/16	09/14/16 07:16	1055
bis(2-chloroisopropyl) ether	ND	ug/L	5.0		1	09/13/16	09/14/16 07:16	1055
bis(2-ethylhexyl) phthalate	ND	ug/L	5.0		1	09/13/16	09/14/16 07:16	1055
4-Bromophenylphenyl ether	ND	ug/L	5.0		1	09/13/16	09/14/16 07:16	1055
Di-n-butyl phthalate	ND	ug/L	5.0		1	09/13/16	09/14/16 07:16	1055
Carbazole	ND	ug/L	5.0		1	09/13/16	09/14/16 07:16	1055
Caprolactam	ND	ug/L	5.0		1	09/13/16	09/14/16 07:16	1055
4-Chloro-3-methyl phenol	ND	ug/L	5.0		1	09/13/16	09/14/16 07:16	1055
4-Chloroaniline	ND	ug/L	5.0		1	09/13/16	09/14/16 07:16	1055
2-Chloronaphthalene	ND	ug/L	5.0		1	09/13/16	09/14/16 07:16	1055
2-Chlorophenol	ND	ug/L	5.0		1	09/13/16	09/14/16 07:16	1055
4-Chlorophenyl Phenyl ether	ND	ug/L	5.0		1	09/13/16	09/14/16 07:16	1055
Chrysene	ND	ug/L	5.0		1	09/13/16	09/14/16 07:16	1055
Dibenz(a,h)Anthracene	ND	ug/L	5.0		1	09/13/16	09/14/16 07:16	1055
Dibenzofuran	ND	ug/L	5.0		1	09/13/16	09/14/16 07:16	1055
3,3-Dichlorobenzidine	ND	ug/L	5.0		1	09/13/16	09/14/16 07:16	1055
2,4-Dichlorophenol	8.1	ug/L	5.0		1	09/13/16	09/14/16 07:16	1055

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090921

Icor Ltd., Middleburg, VA

September 16, 2016

Sample ID: M1Hpt-22 GW (25-28.5	· •	Date/Time	-			PSS Sampl	e ID: 1609092 ⁻	1-010
Matrix: GROUND WATER		Date/Time						
TCL Semivolatile Organic Compounds	Analytica	I Method: S\	N-846 8270	С	F	Preparation Met	nod: 3510C	
	Result	Units	RL	Flag D	il	Prepared	Analyzed	Analyst
Diethyl phthalate	ND	ug/L	5.0		1	09/13/16	09/14/16 07:16	3 1055
Dimethyl phthalate	ND	ug/L	5.0		1	09/13/16	09/14/16 07:16	1055
2,4-Dimethylphenol	ND	ug/L	5.0		1	09/13/16	09/14/16 07:16	1055
4,6-Dinitro-2-methyl phenol	ND	ug/L	5.0		1	09/13/16	09/14/16 07:16	1055
2,4-Dinitrophenol	ND	ug/L	10		1	09/13/16	09/14/16 07:16	1055
2,4-Dinitrotoluene	ND	ug/L	5.0		1	09/13/16	09/14/16 07:16	1055
2,6-Dinitrotoluene	ND	ug/L	5.0		1	09/13/16	09/14/16 07:16	1055
Fluoranthene	ND	ug/L	5.0		1	09/13/16	09/14/16 07:16	1055
Fluorene	ND	ug/L	5.0		1	09/13/16	09/14/16 07:16	1055
Hexachlorobenzene	ND	ug/L	5.0		1	09/13/16	09/14/16 07:16	1055
Hexachlorobutadiene	ND	ug/L	5.0		1	09/13/16	09/14/16 07:16	1055
Hexachlorocyclopentadiene	ND	ug/L	5.0		1	09/13/16	09/14/16 07:16	1055
Hexachloroethane	ND	ug/L	5.0		1	09/13/16	09/14/16 07:16	1055
Indeno(1,2,3-c,d)Pyrene	ND	ug/L	5.0		1	09/13/16	09/14/16 07:16	1055
Isophorone	ND	ug/L	5.0		1	09/13/16	09/14/16 07:16	1055
2-Methylnaphthalene	ND	ug/L	5.0		1	09/13/16	09/14/16 07:16	1055
2-Methyl phenol	ND	ug/L	5.0		1	09/13/16	09/14/16 07:16	1055
3&4-Methylphenol	ND	ug/L	5.0		1	09/13/16	09/14/16 07:16	1055
Naphthalene	ND	ug/L	5.0		1	09/13/16	09/14/16 07:16	1055
2-Nitroaniline	ND	ug/L	5.0		1	09/13/16	09/14/16 07:16	1055
3-Nitroaniline	ND	ug/L	5.0		1	09/13/16	09/14/16 07:16	1055
4-Nitroaniline	ND	ug/L	5.0		1	09/13/16	09/14/16 07:16	1055
Nitrobenzene	ND	ug/L	5.0		1	09/13/16	09/14/16 07:16	1055
2-Nitrophenol	ND	ug/L	5.0		1	09/13/16	09/14/16 07:16	1055
4-Nitrophenol	ND	ug/L	5.0		1	09/13/16	09/14/16 07:16	1055
N-Nitrosodi-n-propyl amine	ND	ug/L	5.0		1	09/13/16	09/14/16 07:16	1055
N-Nitrosodiphenylamine	ND	ug/L	5.0		1	09/13/16	09/14/16 07:16	1055
Di-n-octyl phthalate	ND	ug/L	5.0		1	09/13/16	09/14/16 07:16	1055
Pentachlorophenol	ND	ug/L	5.0		1	09/13/16	09/14/16 07:16	1055
Phenanthrene	ND	ug/L	5.0		1	09/13/16	09/14/16 07:16	3 1055

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090921

Icor Ltd., Middleburg, VA

September 16, 2016

Sample ID: M1Hpt-22 GW (25-28.5) Matrix: GROUND WATER			-	09/09/2016 12: [.] 09/09/2016 16::		e ID: 1609092 ²	1-010
TCL Semivolatile Organic Compounds	Analytica	Method:	SW-846 8270 (C	Preparation Meth	nod: 3510C	
	Result	Units	RL	Flag Dil	Prepared	Analyzed	Analyst
Phenol	ND	ug/L	5.0	1	09/13/16	09/14/16 07:16	1055
Pyrene	ND	ug/L	5.0	1	09/13/16	09/14/16 07:16	1055
Pyridine	ND	ug/L	5.0	1	09/13/16	09/14/16 07:16	1055
2,4,5-Trichlorophenol	ND	ug/L	5.0	1	09/13/16	09/14/16 07:16	1055
2,4,6-Trichlorophenol	ND	ug/L	5.0	1	09/13/16	09/14/16 07:16	1055

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090921

Icor Ltd., Middleburg, VA

September 16, 2016

Sample ID: M1Hpt-08-GW (36.5-40) Matrix: GROUND WATER		Date/Time Date/Time	-			PSS Sample	e ID: 16090921	1-011
TCL Semivolatile Organic Compounds		I Method: S				Preparation Meth	nod: 3510C	
	Result	Units	RL	Flag D	Dil	Prepared	Analyzed	Analyst
Acenaphthene	8.4	ug/L	6.3	_	1	09/13/16	09/14/16 07:45	
Acenaphthylene	ND	ug/L	6.3		1	09/13/16	09/14/16 07:45	1055
Acetophenone	ND	ug/L	6.3		1	09/13/16	09/14/16 07:45	1055
Anthracene	ND	ug/L	6.3		1	09/13/16	09/14/16 07:45	1055
Atrazine	ND	ug/L	6.3		1	09/13/16	09/14/16 07:45	1055
Benzo(a)anthracene	ND	ug/L	6.3		1	09/13/16	09/14/16 07:45	1055
Benzo(a)pyrene	ND	ug/L	6.3		1	09/13/16	09/14/16 07:45	1055
Benzo(b)fluoranthene	ND	ug/L	6.3		1	09/13/16	09/14/16 07:45	1055
Benzo(g,h,i)perylene	ND	ug/L	6.3		1	09/13/16	09/14/16 07:45	1055
Benzo(k)fluoranthene	ND	ug/L	6.3		1	09/13/16	09/14/16 07:45	1055
Biphenyl (Diphenyl)	ND	ug/L	6.3		1	09/13/16	09/14/16 07:45	1055
Butyl benzyl phthalate	ND	ug/L	6.3		1	09/13/16	09/14/16 07:45	1055
bis(2-chloroethoxy) methane	ND	ug/L	6.3		1	09/13/16	09/14/16 07:45	1055
bis(2-chloroethyl) ether	ND	ug/L	6.3		1	09/13/16	09/14/16 07:45	1055
bis(2-chloroisopropyl) ether	ND	ug/L	6.3		1	09/13/16	09/14/16 07:45	1055
bis(2-ethylhexyl) phthalate	ND	ug/L	6.3		1	09/13/16	09/14/16 07:45	1055
4-Bromophenylphenyl ether	ND	ug/L	6.3		1	09/13/16	09/14/16 07:45	1055
Di-n-butyl phthalate	ND	ug/L	6.3		1	09/13/16	09/14/16 07:45	1055
Carbazole	ND	ug/L	6.3		1	09/13/16	09/14/16 07:45	1055
Caprolactam	ND	ug/L	6.3		1	09/13/16	09/14/16 07:45	1055
4-Chloro-3-methyl phenol	ND	ug/L	6.3		1	09/13/16	09/14/16 07:45	1055
4-Chloroaniline	ND	ug/L	6.3		1	09/13/16	09/14/16 07:45	1055
2-Chloronaphthalene	ND	ug/L	6.3		1	09/13/16	09/14/16 07:45	1055
2-Chlorophenol	ND	ug/L	6.3		1	09/13/16	09/14/16 07:45	1055
4-Chlorophenyl Phenyl ether	ND	ug/L	6.3		1	09/13/16	09/14/16 07:45	1055
Chrysene	ND	ug/L	6.3		1	09/13/16	09/14/16 07:45	1055
Dibenz(a,h)Anthracene	ND	ug/L	6.3		1	09/13/16	09/14/16 07:45	1055
Dibenzofuran	ND	ug/L	6.3		1	09/13/16	09/14/16 07:45	1055
3,3-Dichlorobenzidine	ND	ug/L	6.3		1	09/13/16	09/14/16 07:45	1055
2,4-Dichlorophenol	ND	ug/L	6.3		1	09/13/16	09/14/16 07:45	1055

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090921

Icor Ltd., Middleburg, VA

September 16, 2016

Sample ID: M1Hpt-08-GW (36.5-40) Matrix: GROUND WATER			e Sampled: e Received:			•	e ID: 1609092 [,]	1-011
TCL Semivolatile Organic Compounds			SW-846 8270			Preparation Met	nod: 3510C	
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Diethyl phthalate	ND	ug/L	6.3		1	09/13/16	09/14/16 07:45	1055
Dimethyl phthalate	ND	ug/L	6.3		1	09/13/16	09/14/16 07:45	1055
2,4-Dimethylphenol	ND	ug/L	6.3		1	09/13/16	09/14/16 07:45	1055
4,6-Dinitro-2-methyl phenol	ND	ug/L	6.3		1	09/13/16	09/14/16 07:45	1055
2,4-Dinitrophenol	ND	ug/L	13		1	09/13/16	09/14/16 07:45	1055
2,4-Dinitrotoluene	ND	ug/L	6.3		1	09/13/16	09/14/16 07:45	1055
2,6-Dinitrotoluene	ND	ug/L	6.3		1	09/13/16	09/14/16 07:45	1055
Fluoranthene	ND	ug/L	6.3		1	09/13/16	09/14/16 07:45	1055
Fluorene	ND	ug/L	6.3		1	09/13/16	09/14/16 07:45	1055
Hexachlorobenzene	ND	ug/L	6.3		1	09/13/16	09/14/16 07:45	1055
Hexachlorobutadiene	ND	ug/L	6.3		1	09/13/16	09/14/16 07:45	1055
Hexachlorocyclopentadiene	ND	ug/L	6.3		1	09/13/16	09/14/16 07:45	1055
Hexachloroethane	ND	ug/L	6.3		1	09/13/16	09/14/16 07:45	1055
Indeno(1,2,3-c,d)Pyrene	ND	ug/L	6.3		1	09/13/16	09/14/16 07:45	1055
Isophorone	ND	ug/L	6.3		1	09/13/16	09/14/16 07:45	1055
2-Methylnaphthalene	ND	ug/L	6.3		1	09/13/16	09/14/16 07:45	1055
2-Methyl phenol	ND	ug/L	6.3		1	09/13/16	09/14/16 07:45	1055
3&4-Methylphenol	ND	ug/L	6.3		1	09/13/16	09/14/16 07:45	1055
Naphthalene	ND	ug/L	6.3		1	09/13/16	09/14/16 07:45	1055
2-Nitroaniline	ND	ug/L	6.3		1	09/13/16	09/14/16 07:45	1055
3-Nitroaniline	ND	ug/L	6.3		1	09/13/16	09/14/16 07:45	1055
4-Nitroaniline	ND	ug/L	6.3		1	09/13/16	09/14/16 07:45	1055
Nitrobenzene	ND	ug/L	6.3		1	09/13/16	09/14/16 07:45	1055
2-Nitrophenol	ND	ug/L	6.3		1	09/13/16	09/14/16 07:45	1055
4-Nitrophenol	ND	ug/L	6.3		1	09/13/16	09/14/16 07:45	1055
N-Nitrosodi-n-propyl amine	ND	ug/L	6.3		1	09/13/16	09/14/16 07:45	1055
N-Nitrosodiphenylamine	ND	ug/L	6.3		1	09/13/16	09/14/16 07:45	1055
Di-n-octyl phthalate	ND	ug/L	6.3		1	09/13/16	09/14/16 07:45	5 1055
Pentachlorophenol	ND	ug/L	6.3		1	09/13/16		
Phenanthrene	8.9	ug/L	6.3		1	09/13/16	09/14/16 07:45	1055

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090921

Icor Ltd., Middleburg, VA

September 16, 2016

Sample ID: M1Hpt-08-GW (36.5-40) Matrix: GROUND WATER			e Sampled: Received:			-	e ID: 16090921	I-011
TCL Semivolatile Organic Compounds	Analytica	l Method:	SW-846 8270	С	F	Preparation Meth	nod: 3510C	
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Phenol	ND	ug/L	6.3		1	09/13/16	09/14/16 07:45	1055
Pyrene	ND	ug/L	6.3		1	09/13/16	09/14/16 07:45	1055
Pyridine	ND	ug/L	6.3		1	09/13/16	09/14/16 07:45	1055
2,4,5-Trichlorophenol	ND	ug/L	6.3		1	09/13/16	09/14/16 07:45	1055
2,4,6-Trichlorophenol	ND	ug/L	6.3		1	09/13/16	09/14/16 07:45	1055
Sample ID: M1Hpt-10-GW (25-28.5)		Date/Tim	e Sampled:	09/09/2	2016 08:15	PSS Sample	e ID: 16090921	I - 012
			•			•		
Matrix: GROUND WATER			Received:			_		
Matrix: GROUND WATER Oil and Grease		Date/Time	-			_		
		Date/Time	Received:			_		Analyst
	I Analytica	Date/Time	e Received: EPA 1664 A	09/09/2	2016 16:20			Analyst
Oil and Grease	Analytica Result ND	Date/Time I Method: I Units mg/L	e Received: EPA 1664 A RL	09/09/2	2016 16:20 Dil	Prepared	Analyzed	Analyst
Oil and Grease Oil & Grease, Total Recovered	Analytica Result ND	Date/Time I Method: I Units mg/L	EPA 1664 A RL 2.4	09/09/2	2016 16:20 Dil	Prepared	Analyzed 09/15/16 13:14	Analyst

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090921

Icor Ltd., Middleburg, VA

September 16, 2016

Sample ID: M1Hpt-10-GW (25-28.5) Matrix: GROUND WATER			Sampled: Received:			PSS Sample	e ID: 16090921	I - 013
TCL Semivolatile Organic Compounds			W-846 8270			Preparation Meth	nod: 3510C	
	Result	Units	RL	Flag D	iI	Prepared	Analyzed	Analyst
Acenaphthene	ND	ug/L	5.0		1	09/14/16	09/15/16 01:00	1055
Acenaphthylene	ND	ug/L	5.0		1	09/14/16	09/15/16 01:00	1055
Acetophenone	ND	ug/L	5.0		1	09/14/16	09/15/16 01:00	1055
Anthracene	ND	ug/L	5.0		1	09/14/16	09/15/16 01:00	1055
Atrazine	ND	ug/L	5.0		1	09/14/16	09/15/16 01:00	1055
Benzo(a)anthracene	ND	ug/L	5.0		1	09/14/16	09/15/16 01:00	1055
Benzo(a)pyrene	ND	ug/L	5.0		1	09/14/16	09/15/16 01:00	1055
Benzo(b)fluoranthene	ND	ug/L	5.0		1	09/14/16	09/15/16 01:00	1055
Benzo(g,h,i)perylene	ND	ug/L	5.0		1	09/14/16	09/15/16 01:00	1055
Benzo(k)fluoranthene	ND	ug/L	5.0		1	09/14/16	09/15/16 01:00	1055
Biphenyl (Diphenyl)	ND	ug/L	5.0		1	09/14/16	09/15/16 01:00	1055
Butyl benzyl phthalate	ND	ug/L	5.0		1	09/14/16	09/15/16 01:00	1055
bis(2-chloroethoxy) methane	ND	ug/L	5.0		1	09/14/16	09/15/16 01:00	1055
bis(2-chloroethyl) ether	ND	ug/L	5.0		1	09/14/16	09/15/16 01:00	1055
bis(2-chloroisopropyl) ether	ND	ug/L	5.0		1	09/14/16	09/15/16 01:00	1055
bis(2-ethylhexyl) phthalate	ND	ug/L	5.0		1	09/14/16	09/15/16 01:00	1055
4-Bromophenylphenyl ether	ND	ug/L	5.0		1	09/14/16	09/15/16 01:00	1055
Di-n-butyl phthalate	ND	ug/L	5.0		1	09/14/16	09/15/16 01:00	1055
Carbazole	ND	ug/L	5.0		1	09/14/16	09/15/16 01:00	1055
Caprolactam	ND	ug/L	5.0		1	09/14/16	09/15/16 01:00	1055
4-Chloro-3-methyl phenol	ND	ug/L	5.0		1	09/14/16	09/15/16 01:00	1055
4-Chloroaniline	ND	ug/L	5.0		1	09/14/16	09/15/16 01:00	1055
2-Chloronaphthalene	ND	ug/L	5.0		1	09/14/16	09/15/16 01:00	1055
2-Chlorophenol	ND	ug/L	5.0		1	09/14/16	09/15/16 01:00	1055
4-Chlorophenyl Phenyl ether	ND	ug/L	5.0		1	09/14/16	09/15/16 01:00	1055
Chrysene	ND	ug/L	5.0		1	09/14/16	09/15/16 01:00	1055
Dibenz(a,h)Anthracene	ND	ug/L	5.0		1	09/14/16	09/15/16 01:00	1055
Dibenzofuran	ND	ug/L	5.0		1	09/14/16	09/15/16 01:00	1055
3,3-Dichlorobenzidine	ND	ug/L	5.0		1	09/14/16	09/15/16 01:00	1055
2,4-Dichlorophenol	ND	ug/L	5.0		1	09/14/16	09/15/16 01:00	1055

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090921

Icor Ltd., Middleburg, VA

September 16, 2016

Sample ID: M1Hpt-10-GW (25-28.5) Matrix: GROUND WATER			Sampled: Received:			PSS Sample	e ID: 16090921	I - 013
TCL Semivolatile Organic Compounds			W-846 8270			Preparation Meth	nod: 3510C	
	Result	Units	RL	Flag [Dil	Prepared	Analyzed	Analyst
Diethyl phthalate	ND	ug/L	5.0		1	09/14/16	09/15/16 01:00	
Dimethyl phthalate	ND	ug/L	5.0		1	09/14/16	09/15/16 01:00	1055
2,4-Dimethylphenol	ND	ug/L	5.0		1	09/14/16	09/15/16 01:00	1055
4,6-Dinitro-2-methyl phenol	ND	ug/L	5.0		1	09/14/16	09/15/16 01:00	1055
2,4-Dinitrophenol	ND	ug/L	10		1	09/14/16	09/15/16 01:00	1055
2,4-Dinitrotoluene	ND	ug/L	5.0		1	09/14/16	09/15/16 01:00	1055
2,6-Dinitrotoluene	ND	ug/L	5.0		1	09/14/16	09/15/16 01:00	1055
Fluoranthene	ND	ug/L	5.0		1	09/14/16	09/15/16 01:00	1055
Fluorene	ND	ug/L	5.0		1	09/14/16	09/15/16 01:00	1055
Hexachlorobenzene	ND	ug/L	5.0		1	09/14/16	09/15/16 01:00	1055
Hexachlorobutadiene	ND	ug/L	5.0		1	09/14/16	09/15/16 01:00	1055
Hexachlorocyclopentadiene	ND	ug/L	5.0		1	09/14/16	09/15/16 01:00	1055
Hexachloroethane	ND	ug/L	5.0		1	09/14/16	09/15/16 01:00	1055
Indeno(1,2,3-c,d)Pyrene	ND	ug/L	5.0		1	09/14/16	09/15/16 01:00	1055
Isophorone	ND	ug/L	5.0		1	09/14/16	09/15/16 01:00	1055
2-Methylnaphthalene	ND	ug/L	5.0		1	09/14/16	09/15/16 01:00	1055
2-Methyl phenol	ND	ug/L	5.0		1	09/14/16	09/15/16 01:00	1055
3&4-Methylphenol	ND	ug/L	5.0		1	09/14/16	09/15/16 01:00	1055
Naphthalene	ND	ug/L	5.0		1	09/14/16	09/15/16 01:00	1055
2-Nitroaniline	ND	ug/L	5.0		1	09/14/16	09/15/16 01:00	1055
3-Nitroaniline	ND	ug/L	5.0		1	09/14/16	09/15/16 01:00	1055
4-Nitroaniline	ND	ug/L	5.0		1	09/14/16	09/15/16 01:00	1055
Nitrobenzene	ND	ug/L	5.0		1	09/14/16	09/15/16 01:00	1055
2-Nitrophenol	ND	ug/L	5.0		1	09/14/16	09/15/16 01:00	1055
4-Nitrophenol	ND	ug/L	5.0		1	09/14/16	09/15/16 01:00	1055
N-Nitrosodi-n-propyl amine	ND	ug/L	5.0		1	09/14/16	09/15/16 01:00	1055
N-Nitrosodiphenylamine	ND	ug/L	5.0		1	09/14/16	09/15/16 01:00	1055
Di-n-octyl phthalate	ND	ug/L	5.0		1	09/14/16	09/15/16 01:00	1055
Pentachlorophenol	ND	ug/L	5.0		1	09/14/16	09/15/16 01:00	1055
Phenanthrene	ND	ug/L	5.0		1	09/14/16	09/15/16 01:00	1055

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16090921

Icor Ltd., Middleburg, VA

September 16, 2016

Sample ID: M1Hpt-10-GW (25-28.5) Matrix: GROUND WATER			e Sampled: 09/0 e Received: ^{09/0}		·	e ID: 1609092	1-013
TCL Semivolatile Organic Compounds	Analytica	l Method: \$	SW-846 8270 C		Preparation Meth	nod: 3510C	
	Result	Units	RL Flag	g Dil	Prepared	Analyzed	Analyst
Phenol	ND	ug/L	5.0	1	09/14/16	09/15/16 01:00	1055
Pyrene	ND	ug/L	5.0	1	09/14/16	09/15/16 01:00	1055
Pyridine	ND	ug/L	5.0	1	09/14/16	09/15/16 01:00	1055
2,4,5-Trichlorophenol	ND	ug/L	5.0	1	09/14/16	09/15/16 01:00	1055
2,4,6-Trichlorophenol	ND	ug/L	5.0	1	09/14/16	09/15/16 01:00	1055

Case Narrative Summary

Client Name: Icor Ltd.

Project Name: Robinson Terminal North

Work Order Number(s): 16090921

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

The analyses of chlorine, pH, dissolved oxygen, temperature and sulfite for drinking water and non-potable samples tested for compliance have a maximum holding time of 15 minutes. As such, all laboratory analyses for these analytes exceed holding times.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

Container label for COC sample M1Hpt-GW (25-28.5) reads M1Hpt-21 GW (25-28.5). Amber container received for sample M1Hpt-10-GW (25-28.5) is mis-labelled but confimed per client, sampling date is 9/9/16, time 08:15 for all containers for this sample (internal IDs -012, -013).

Analytical:

RCRA Metals

Batch: 135862

Closing CCV had an arsenic recovery of 89%, which is below the control limits of 90-110%.

Total Petroleum Hydrocarbons-GRO

Batch: 135716

Surrogate recoveries affected by sample matrix.

Organochlorine Pesticides

Batch: 135800

The recoveries of 4,4-DDT and Methoxychlor in closing CCVs were 71% and 76%(80-120%) due to sample matrix. All samples were confirmed on second column.

Laboratory control sample and/or laboratory control sample duplicate (LCS/LCSD) exceedances identified; see LCS summary form.

TCL Volatile Organic Compounds

Batch: 135849

Surrogate exceedances identified; see surrogate summary form.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.



Analytical Data Package Information Summary

Work Order(s): 16090921

Report Prepared For: Icor Ltd., Middleburg, VA Project Name: Robinson Terminal North Project Manager: Mike Bruzzesi

Method	Client Sample Id	Analysis Type	Lab Sample Id	Analyst	Mtx	Prep Batch	Analytical Batch	Sampled	Prepared	Analyzed
ASTM D2216 05	M1Hpt-21 (1-2)	Initial	16090921-001	1059	S	135699	135699	09/09/2016	09/12/2016 16:39	09/12/2016 16:39
	M1Hpt-21 (4.5-5.5)	Initial	16090921-002	1059	S	135699	135699	09/09/2016	09/12/2016 16:39	09/12/2016 16:39
	M1Hpt-21 (9-10)	Initial	16090921-003	1059	S	135699	135699	09/09/2016	09/12/2016 16:39	09/12/2016 16:39
	M1Hpt-21 (24-25)	Initial	16090921-004	1059	S	135699	135699	09/09/2016	09/12/2016 16:39	09/12/2016 16:39
	M1Hpt-22 (1-2)	Initial	16090921-006	1059	S	135699	135699	09/09/2016	09/12/2016 16:39	09/12/2016 16:39
	M1Hpt-22 (4-5)	Initial	16090921-007	1059	S	135699	135699	09/09/2016	09/12/2016 16:39	09/12/2016 16:39
	M1Hpt-22 (19-20)	Initial	16090921-008	1059	S	135699	135699	09/09/2016	09/12/2016 16:39	09/12/2016 16:39
	M1Hpt-22 (24-25)	Initial	16090921-009	1059	S	135699	135699	09/09/2016	09/12/2016 16:39	09/12/2016 16:39
EPA 1664 A	M1Hpt-21 GW (25-	Initial	16090921-005	1022	×	135811	135811	09/09/2016	09/15/2016 13:14	09/15/2016 13:14
	M1Hpt-22 GW (25-	Initial	16090921-010	1022	W	135811	135811	09/09/2016	09/15/2016 13:14	09/15/2016 13:14
	28.3) M1Hpt-10-GW (25- 28.5)	Initial	16090921-012	1022	M	135811	135811	09/09/2016	09/15/2016 13:14	09/15/2016 13:14
	135811-1-BKS	BKS	135811-1-BKS	1022	M	135811	135811		09/15/2016 13:14	09/15/2016 13:14
	135811-1-BLK	BLK	135811-1-BLK	1022	M	135811	135811		09/15/2016 13:14	09/15/2016 13:14
	135811-1-BSD	BSD	135811-1-BSD	1022	M	135811	135811		09/15/2016 13:14	09/15/2016 13:14
EPA 1664 A	M1Hpt-21 GW (25-28.5)	Initial	16090921-005	1022	≽	135809	135809	09/09/2016	09/15/2016 12:59	09/15/2016 12:59
	M1Hpt-22 GW (25- 28.5)	Initial	16090921-010	1022	×	135809	135809	09/09/2016	09/15/2016 12:59	09/15/2016 12:59
	M1Hpt-10-GW (25- 28.5)	Initial	16090921-012	1022	≽	135809	135809	09/09/2016	09/15/2016 12:59	09/15/2016 12:59
	135809-1-BKS	BKS	135809-1-BKS	1022	M	135809	135809		09/15/2016 12:59	09/15/2016 12:59
	135809-1-BLK	BLK	135809-1-BLK	1022	M	135809	135809		09/15/2016 12:59	09/15/2016 12:59
	135809-1-BSD	BSD	135809-1-BSD	1022	M	135809	135809		09/15/2016 12:59	09/15/2016 12:59
SW-846 6020 A	62534-1-BKS	BKS	62534-1-BKS	1033	S	62534	135808		09/14/2016 09:26	09/14/2016 19:33
	62534-1-BLK	BLK	62534-1-BLK	1033	S	62534	135808		09/14/2016 09:26	09/14/2016 19:26
	M1Hpt-21 (4.5-5.5) S	MS	16090921-002 S	1033	S	62534	135808	09/09/2016	09/14/2016 09:26	09/14/2016 19:46
	M1Hpt-21 (4.5-5.5) SD	MSD	16090921-002 SD	1033	∞	62534	135808	09/09/2016	09/14/2016 09:26	09/14/2016 19:52

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Analytical Data Package Information Summary

Work Order(s): 16090921

Report Prepared For: Icor Ltd., Middleburg, VA Project Name: Robinson Terminal North Project Manager: Mike Bruzzesi

Method	Client Sample Id	Analysis Type	Lab Sample Id	Analyst	Mtx	Prep Batch	Analytical Batch	Sampled	Prepared	Analyzed
SW-846 6020 A	62534-1-BKS M1Hpt-21 (4.5-5.5) M1Hpt-22 (4-5)	Reanalysis Reanalysis Reanalysis	62534-1-BKS 16090921-002 16090921-007	1033 1033 1033	s s	62534 62534 62534	135862 135862 135862	09/09/2016 09/09/2016	09/14/2016 09:26 09/14/2016 09:26 09/14/2016 09:26	09/15/2016 15:02 09/15/2016 15:08 09/15/2016 15:22
SW-846 6020 A	M1Hpt-22 (1-2) M1Hpt-22 (1-2)	Initial Reanalysis	16090921-006 16090921-006	1033 1033	s s	62534 62534	135808 135862	09/09/2016 09/09/2016	09/14/2016 09:26 09/14/2016 09:26	09/14/2016 20:12 09/15/2016 15:15
SW-846 8015 C	M1Hpt-21 GW (25-28.5) M1Hpt-22 GW (25-28.5)	Initial Initial	16090921-005 16090921-010	1045	M M	62528 62528	135784 135784	09/09/2016	09/14/2016 08:47 09/14/2016 08:47	09/15/2016 19:07 09/15/2016 18:42
	62528-1-BKS 62528-1-BLK	BKS BLK	62528-1-BKS 62528-1-BLK	1045 1045	≽ ≽	62528 62528	135784 135784		09/14/2016 08:47 09/14/2016 08:47	09/14/2016 13:11 09/14/2016 12:44
	62528-1-BSD M1Hpt-21 (9-10)	BSD Initial	62528-1-BSD 16090921-003	1045 1045	s ≼	62528 62529	135784 135866	09/09/2016	09/14/2016 08:47 09/14/2016 08:49	09/14/2016 13:11 09/16/2016 03:53
	M1Hpt-21 (24-25) M1Hpt-22 (19-20)	Initial Initial	16090921-004	1045	s s	62529	135866	09/09/2016	09/14/2016 08:49 09/14/2016 08:49	09/16/2016 04:18 09/16/2016 04:18
	M1Hpt-22 (24-25)	Initial	16090921-009	1045	· v ·	62529	135866	09/09/2016	09/14/2016 08:49	09/16/2016 04:43
	62529-1-BKS 62529-1-BLK	BLK	62529-1-BKS 62529-1-BLK	1045 1045	s s	62529 62529	135866 135866		09/14/2016 08:49 09/14/2016 08:49	09/16/2016 00:58 09/16/2016 00:33
	62529-1-BSD 11790-UST2-E- Bottom S	BSD MS	62529-1-BSD 16090911-001 S	1045	o o	62529 62529	135866 135866	09/08/2016	09/14/2016 08:49 09/14/2016 08:49	09/16/2016 01:23 09/16/2016 00:58
	11790-UST2-E- Bottom SD	MSD	16090911-001 SD	1045	w	62529	135866	09/08/2016	09/14/2016 08:49	09/16/2016 01:23
SW-846 8015C	M1Hpt-21 (24-25) M1Hpt-22 (19-20)	Initial Initial	16090921-004 16090921-008	1035	s s	62513 62513	135716	09/09/2016 09/09/2016	09/12/2016 21:27 09/12/2016 21:27	09/13/2016 02:00 09/13/2016 02:30
	M1Hpt-22 (24-25)	Initial	16090921-009	1035	S	62513	135716	09/09/2016	09/12/2016 21:27	09/13/2016 03:00
	62513-2-BKS	BKS	62513-2-BKS	1035	S	62513	135716		09/12/2016 21:27	09/12/2016 23:58
	62513-2-BLK	BLK	62513-2-BLK	1035	S	62513	135716		09/12/2016 21:27	09/12/2016 23:28
	M1Hpt-22 (24-25) S	MS	16090921-009 S	1035	S	62513	135716	09/09/2016	09/12/2016 21:27	09/13/2016 07:04

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Analytical Data Package Information Summary

Work Order(s): 16090921

Report Prepared For: Icor Ltd., Middleburg, VA Project Name: Robinson Terminal North Project Manager: Mike Bruzzesi

Method	Client Sample Id	Analysis Type	Lab Sample Id	Analyst	Mtx	Prep Batch	Prep Batch Analytical Batch	Sampled	Prepared	Analyzed
SW-846 8015C	M1Hpt-22 (24-25) SD	MSD	16090921-009 SD	1035	s	62513	135716	09/09/2016	09/12/2016 21:27	09/13/2016 07:34
	M1Hpt-21 (9-10)	Initial	16090921-003	1035	S	62526	135740	09/09/2016	09/13/2016 08:05	09/13/2016 15:39
	62526-2-BKS	BKS	62526-2-BKS	1035	S	62526	135740	!	09/13/2016 08:05	09/13/2016 10:36
	62526-2-BLK	BLK	62526-2-BLK	1035	S	62526	135740		09/13/2016 08:05	09/13/2016 10:05
	N-Side S	MS	16091212-001 S	1035	S	62526	135740	09/01/2016	09/13/2016 08:05	09/13/2016 16:39
	N-Side SD	MSD	16091212-001 SD	1035	S	62526	135740	09/01/2016	09/13/2016 08:05	09/13/2016 17:09
	M1Hpt-21 GW (25-	Initial	16090921-005	1035	8	62576	135835	09/09/2016	09/15/2016 09:18	09/15/2016 13:19
	23.5) M1Hpt-22 GW (25- 28.5)	Initial	16090921-010	1035	\bowtie	62576	135835	09/09/2016	09/15/2016 09:18	09/15/2016 13:45
	62576-2-BKS	BKS	62576-2-BKS	1035	W	62576	135835	!	09/15/2016 09:18	09/15/2016 11:37
	62576-2-BLK	BLK	62576-2-BLK	1035	W	62576	135835	!	09/15/2016 09:18	09/15/2016 11:12
	M1Hpt-14-GW (25-28.5) S	MS	16090912-003 S	1035	W	62576	135835	09/08/2016	09/15/2016 09:18	09/15/2016 14:36
	M1Hpt-14-GW (25- 28.5) SD	MSD	16090912-003 SD	1035	≽	62576	135835	09/08/2016	09/15/2016 09:18	09/15/2016 15:01
SW-846 8081 B	M1Hpt-21 (1-2)	Initial	16090921-001	1029	S	62498	135800	09/09/2016	09/12/2016 15:29	09/14/2016 22:03
	M1Hpt-21 (4.5-5.5)	Initial	16090921-002	1029	S	62498	135800	09/09/2016	09/12/2016 15:29	09/14/2016 17:24
	M1Hpt-22 (1-2)	Initial	16090921-006	1029	S	62498	135800	09/09/2016	09/12/2016 15:29	09/14/2016 22:31
	M1Hpt-22 (4-5)	Initial	16090921-007	1029	S	62498	135800	09/09/2016	09/12/2016 15:29	09/14/2016 17:52
	62498-1-BKS	BKS	62498-1-BKS	1029	S	62498	135800		09/12/2016 15:29	09/14/2016 22:31
	62498-1-BLK	BLK	62498-1-BLK	1029	S	62498	135800		09/12/2016 15:29	09/14/2016 12:43
	62498-1-BSD	BSD	62498-1-BSD	1029	S	62498	135800		09/12/2016 15:29	09/14/2016 22:03
	M1Hpt-16 (4-5) S	MS	16090912-005 S	1029	S	62498	135800	09/08/2016	09/12/2016 15:29	09/14/2016 14:08
	M1Hpt-16 (4-5) SD	MSD	16090912-005 SD	1029	S	62498	135800	09/08/2016	09/12/2016 15:29	09/14/2016 15:04
SW-846 8082 A	M1Hpt-21 (1-2)	Initial	16090921-001	1029	S	62499	135705	09/09/2016	09/12/2016 15:33	09/12/2016 16:13
	M1Hpt-21 (4.5-5.5)	Initial	16090921-002	1029	S	62499	135705	09/09/2016	09/12/2016 15:33	09/12/2016 16:42
	M1Hpt-22 (1-2)	Initial	16090921-006	1029	S	62499	135705	09/09/2016	09/12/2016 15:33	09/12/2016 17:11
	M1Hpt-22 (4-5)	Initial	16090921-007	1029	$^{\infty}$	62499	135705	09/09/2016	09/12/2016 15:33	09/12/2016 17:40
	62499-1-BKS	BKS	62499-1-BKS	1029	S	62499	135705		09/12/2016 15:33	09/12/2016 16:42

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Analytical Data Package Information Summary

Work Order(s): 16090921

Report Prepared For: Icor Ltd., Middleburg, VA Project Name: Robinson Terminal North Project Manager: Mike Bruzzesi

Method	Client Sample Id	Analysis Type	Lab Sample Id	Analyst	Mtx	Prep Batch	Analytical Batch	Sampled	Prepared	Analyzed
SW-846 8082 A	62499-1-BLK	BLK	62499-1-BLK	1029	S	62499	135705		09/12/2016 15:33	09/12/2016 16:13
	62499-1-BSD	BSD	62499-1-BSD	1029	S	62499	135705		09/12/2016 15:33	09/12/2016 17:11
	M1Hpt-16 (4-5) S	MS	16090912-005 S	1029	S	62499	135705	09/08/2016	09/12/2016 15:33	09/12/2016 17:40
	M1Hpt-16 (4-5) SD	MSD	16090912-005 SD	1029	S	62499	135705	09/08/2016	09/12/2016 15:33	09/12/2016 18:09
SW-846 8151 A	M1Hpt-21 (1-2)	Initial	16090921-001	1029	S	62477	135724	09/09/2016	09/12/2016 09:33	09/13/2016 23:18
	M1Hpt-21 (4.5-5.5)	Initial	16090921-002	1029	S	62477	135724	09/09/2016	09/12/2016 09:33	09/14/2016 00:23
	M1Hpt-22 (1-2)	Initial	16090921-006	1029	S	62477	135724	09/09/2016	09/12/2016 09:33	09/14/2016 00:56
	M1Hpt-22 (4-5)	Initial	16090921-007	1029	S	62477	135724	09/09/2016	09/12/2016 09:33	09/14/2016 01:28
	62477-1-BKS	BKS	62477-1-BKS	1029	S	62477	135724		09/12/2016 09:33	09/13/2016 10:23
	62477-1-BLK	BLK	62477-1-BLK	1029	S	62477	135724		09/12/2016 09:33	09/13/2016 09:50
	62477-1-BSD	BSD	62477-1-BSD	1029	S	62477	135724		09/12/2016 09:33	09/13/2016 10:55
	1614-02 S	MS	16090903-001 S	1029	S	62477	135724	09/08/2016	09/12/2016 09:33	09/13/2016 11:28
	1614-02 SD	MSD	16090903-001 SD	1029	∞	62477	135724	09/08/2016	09/12/2016 09:33	09/13/2016 12:00
SW-846 8260 B	M1Hpt-21 GW (25-28.5)	Initial	16090921-005	1011	×	62545	135763	09/09/2016	09/14/2016 00:19	09/14/2016 02:30
	M1Hpt-22 GW (25-28.5)	Initial	16090921-010	1011	8	62545	135763	09/09/2016	09/14/2016 00:19	09/14/2016 03:59
	62545-1-BKS	BKS	62545-1-BKS	1011	M	62545	135763		09/14/2016 00:19	09/14/2016 09:07
	62545-1-BLK	BLK	62545-1-BLK	1011	W	62545	135763	-	09/14/2016 00:19	09/14/2016 02:08
	M1Hpt-21 GW (25-28 5) S	MS	16090921-005 S	1011	\bowtie	62545	135763	09/09/2016	09/14/2016 00:19	09/14/2016 02:52
	M1Hpt-21 GW (25-28.5) SD	MSD	16090921-005 SD	1011	8	62545	135763	09/09/2016	09/14/2016 00:19	09/14/2016 03:14
	M1Hpt-21 (24-25)	Initial	16090921-004	1011	S	62583	135847	09/09/2016	09/15/2016 10:59	09/15/2016 20:56
	62583-1-BKS	BKS	62583-1-BKS	1011	S	62583	135847		09/15/2016 10:59	09/15/2016 12:58
	62583-1-BLK	BLK	62583-1-BLK	1011	S	62583	135847		09/15/2016 10:59	09/15/2016 13:38
	WCTP-12 S	MS	16090910-007 S	1011	S	62583	135847	09/08/2016	09/15/2016 10:59	09/15/2016 14:58
	WCTP-12 SD	MSD	16090910-007 SD	1011	S	62583	135847	09/08/2016	09/15/2016 10:59	09/15/2016 15:38
	M1Hpt-21 (9-10)	Initial	16090921-003	1011	S	62584	135849	09/09/2016	09/15/2016 23:35	09/16/2016 05:34
	M1Hpt-22 (19-20)	Initial	16090921-008	1011	ω	62584	135849	09/09/2016	09/15/2016 23:35	09/16/2016 10:11

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Analytical Data Package Information Summary

Work Order(s): 16090921

Report Prepared For: Icor Ltd., Middleburg, VA Project Name: Robinson Terminal North Project Manager: Mike Bruzzesi

Method	Client Sample Id	Analysis Type	Analysis Type Lab Sample Id	Analyst	Mtx	Prep Batch	Analytical Batch	Sampled	Prepared	Analyzed
SW-846 8260 B	M1Hpt-22 (24-25)	Initial	16090921-009	1011	S	62584	135849	09/09/2016	09/15/2016 23:35	09/16/2016 09:32
	62584-1-BKS	BKS	62584-1-BKS	1011	S	62584	135849		09/15/2016 23:35	09/16/2016 02:15
	62584-1-BLK	BLK	62584-1-BLK	1011	S	62584	135849		09/15/2016 23:35	09/16/2016 02:55
	NEBBC-72, 86-98 S	MS	16091201-003 S	1011	S	62584	135849	09/11/2016	09/15/2016 23:35	09/16/2016 04:15
	NEBBC-72, 86-98 SD	MSD	16091201-003 SD	1011	S	62584	135849	09/11/2016	09/15/2016 23:35	09/16/2016 04:54
	M1Hpt-21 (9-10)	Reanalysis	16090921-003	1011	S	62584	135849	09/09/2016	09/15/2016 23:35	09/16/2016 10:51
SW-846 8270 C	M1Hpt-21 (24-25)	Initial	16090921-004	1055	S	62476	135707	09/09/2016	09/12/2016 08:41	09/12/2016 16:46
	M1Hpt-22 (24-25)	Initial	16090921-009	1055	S	62476	135707	09/09/2016	09/12/2016 08:41	09/12/2016 17:14
	62476-1-BKS	BKS	62476-1-BKS	1055	S	62476	135707		09/12/2016 08:41	09/12/2016 13:29
	62476-1-BLK	BLK	62476-1-BLK	1055	S	62476	135707		09/12/2016 08:41	09/12/2016 13:00
	62476-1-BSD	BSD	62476-1-BSD	1055	S	62476	135707		09/12/2016 08:41	09/12/2016 13:57
	1614-02 S	MS	16090903-001 S	1055	S	62476	135707	09/08/2016	09/12/2016 08:41	09/12/2016 14:25
	1614-02 SD	MSD	16090903-001 SD	1055	S	62476	135707	09/08/2016	09/12/2016 08:41	09/12/2016 14:53
	M1Hpt-21 GW (25-28.5)	Initial	16090921-005	1055	8	62510	135757	09/09/2016	09/13/2016 10:20	09/14/2016 06:48
	M1Hpt-22 GW (25-28.5)	Initial	16090921-010	1055	M	62510	135757	09/09/2016	09/13/2016 10:20	09/14/2016 07:16
	M1Hpt-08-GW (36.5-40)	Initial	16090921-011	1055	\bowtie	62510	135757	09/09/2016	09/13/2016 10:20	09/14/2016 07:45
	62510-1-BKS	BKS	62510-1-BKS	1055	W	62510	135757		09/13/2016 10:20	09/13/2016 23:39
	62510-1-BLK	BLK	62510-1-BLK	1055	W	62510	135757	!	09/13/2016 10:20	09/13/2016 23:11
	62510-1-BSD	BSD	62510-1-BSD	1055	W	62510	135757	!	09/13/2016 10:20	09/14/2016 00:07
	M1Hpt-10-GW (25-28.5)	Initial	16090921-013	1055	≽	62548	135843	09/09/2016	09/14/2016 13:02	09/15/2016 01:00
	62548-1-BKS	BKS	62548-1-BKS	1055	W	62548	135843		09/14/2016 13:02	09/14/2016 21:41
	62548-1-BLK	BLK	62548-1-BLK	1055	W	62548	135843		09/14/2016 13:02	09/14/2016 21:13
	62548-1-BSD	BSD	62548-1-BSD	1055	\bowtie	62548	135843		09/14/2016 13:02	09/14/2016 22:10

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Analytical Method: SW-846 8082 A Seq Number: 135705 PSS Sample ID: 16090921-001		Matrix: Soil		Prep Method: Date Prep:	
Surrogate	%Rec	Flag	Limits	Units	Analysis Date
Decachlorobiphenyl Tetrachloro-m-xylene	95 82		61-150 42-142		09/12/16 16:13 09/12/16 16:13
Analytical Method: SW-846 8151 A Seq Number: 135724 PSS Sample ID: 16090921-001		Matrix: Soil		Prep Method: Date Prep:	
Surrogate	%Rec	Flag	Limits	Units	Analysis Date
2,4-Dichlorophenylacetic Acid	113		61-144	%	09/13/16 23:18
Analytical Method: SW-846 8081 B Seq Number: 135800 PSS Sample ID: 16090921-001		Matrix: Soil		Prep Method: Date Prep:	
	0/ D		Limita	11-:4-	Analysis
Surrogate	%Rec	Flag	Limits	Units	Date
Surrogate Decachlorobiphenyl Tetrachloro-m-xylene	% Rec 110 104	Flag	23-165 31-145	%	_
Decachlorobiphenyl	110	Hag Matrix: Soil	23-165	%	Date 09/14/16 22:03 09/14/16 22:03 SW3550C
Decachlorobiphenyl Tetrachloro-m-xylene Analytical Method: SW-846 8082 A Seq Number: 135705	110	-	23-165	% % Prep Method:	Date 09/14/16 22:03 09/14/16 22:03 SW3550C
Decachlorobiphenyl Tetrachloro-m-xylene Analytical Method: SW-846 8082 A Seq Number: 135705 PSS Sample ID: 16090921-002	110 104	Matrix: Soil	23-165 31-145	% Prep Method: Date Prep: Units %	Date 09/14/16 22:03 09/14/16 22:03 SW3550C 09/12/2016 Analysis
Decachlorobiphenyl Tetrachloro-m-xylene Analytical Method: SW-846 8082 A Seq Number: 135705 PSS Sample ID: 16090921-002 Surrogate Decachlorobiphenyl	110 104 %Rec 95	Matrix: Soil	23-165 31-145 Limits 61-150	% Prep Method: Date Prep: Units %	Date 09/14/16 22:03 09/14/16 22:03 SW3550C 09/12/2016 Analysis Date 09/12/16 16:42 09/12/16 16:42 SW8151A_PREP
Decachlorobiphenyl Tetrachloro-m-xylene Analytical Method: SW-846 8082 A Seq Number: 135705 PSS Sample ID: 16090921-002 Surrogate Decachlorobiphenyl Tetrachloro-m-xylene Analytical Method: SW-846 8151 A Seq Number: 135724	110 104 %Rec 95	Matrix: Soil Flag	23-165 31-145 Limits 61-150	% % Prep Method: Date Prep: Units % % %	Date 09/14/16 22:03 09/14/16 22:03 SW3550C 09/12/2016 Analysis Date 09/12/16 16:42 09/12/16 16:42 SW8151A_PREP

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Analytical Method Seq Number: PSS Sample ID:	1: SW-846 8081 B 135800 16090921-002		Matrix:	Soil	Prep Method Date Prep	
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
Decachlorobipheny Tetrachloro-m-xyle		113 116		23-165 31-145	% %	09/14/16 17:24 09/14/16 17:24
Analytical Method Seq Number: PSS Sample ID:	1: SW-846 8015 C 135866 16090921-003		Matrix:	Soil	Prep Method Date Prep	
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
o-Terphenyl		75		34-133	%	09/16/16 03:53
Analytical Method Seq Number: PSS Sample ID:	1: SW-846 8015C 135740 16090921-003		Matrix:	Soil	Prep Method Date Prep	
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
a,a,a-Trifluorotolue	ene	90		50-122	%	09/13/16 15:39
Analytical Method Seq Number: PSS Sample ID:	I: SW-846 8260 B 135849 16090921-003		Matrix:	Soil	Prep Method Date Prep	
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
4-Bromofluorobenz Dibromofluorometh Toluene-D8		115 83 109	*	82-126 92-113 94-105	% % %	09/16/16 05:34 09/16/16 05:34 09/16/16 05:34
Analytical Method Seq Number: PSS Sample ID:	1: SW-846 8270 C 135707 16090921-004		Matrix:	Soil	Prep Method Date Prep	
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
2-Fluorobiphenyl 2-Fluorophenol Nitrobenzene-d5 Phenol-d6 Terphenyl-D14 2,4,6-Tribromophe	nol	65 63 67 65 108 68		32-107 34-113 35-123 34-120 46-154 31-113	% % % % %	09/12/16 16:46 09/12/16 16:46 09/12/16 16:46 09/12/16 16:46 09/12/16 16:46 09/12/16 16:46

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Analytical Method Seq Number:	: SW-846 8015 C 135866		Matrix:	Soil	Prep Method: Date Prep	
PSS Sample ID:	16090921-004					
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
o-Terphenyl		84		34-133	%	09/16/16 04:18
						OWEGO
Analytical Method	135716		Matrix:	Soil	Prep Method:	
Seq Number: PSS Sample ID:	16090921-004		Matrix.	2011	Date Prep	: 09/12/2016
1 00 Sample ID.	10090921-004	a. =				
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
a,a,a-Trifluorotolue	ne	92		50-122	%	09/13/16 02:00
Analytical Method					Prep Method:	
Seq Number:	135847		Matrix:	Soil	Date Prep	: 09/15/2016
PSS Sample ID:	16090921-004					
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
4-Bromofluorobenz		119		82-126	%	09/15/16 20:56
Dibromofluorometh Toluene-D8	ane	99 97		92-113 94-105	% %	09/15/16 20:56 09/15/16 20:56
Toluene-Do		91		94-103	/6	09/13/10 20:30
Analytical Method	: SW-846 8270 C				Prep Method:	: SW3510C
Seq Number:	135757		Matrix:	Ground Water	Date Prep	: 09/13/2016
PSS Sample ID:	16090921-005					
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
2-Fluorobiphenyl		69		35-107	%	09/14/16 06:48
2-Fluorophenol		68 71		32-106	%	09/14/16 06:48
Nitrobenzene-d5 Phenol-d6		71 71		34-123 36-111	% %	09/14/16 06:48 09/14/16 06:48
Terphenyl-D14		88		43-143	%	09/14/16 06:48
2,4,6-Tribromopher	nol	84		26-122	%	09/14/16 06:48
Analytical Method	· SW-846 8015 C				Prep Method:	: SW3510C
Seq Number:	135784		Matrix:	Ground Water	Date Prep	
PSS Sample ID:	16090921-005					
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
o-Terphenyl		70		46-111	%	09/15/16 19:07

Analytical Method Seq Number: PSS Sample ID:	: SW-846 8260 B 135763 16090921-005	N/Pag		Ground Water	Prep Method Date Prep	: 09/14/2016
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
4-Bromofluorobenz Dibromofluorometh Toluene-D8		101 101 101		86-111 91-119 90-117	% % %	09/14/16 02:30 09/14/16 02:30 09/14/16 02:30
Analytical Method Seq Number: PSS Sample ID:	: SW-846 8015C 135835 16090921-005		Matrix:	Ground Water	Prep Method Date Prep	
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
a,a,a-Trifluorotolue	ne	70		55-114	%	09/15/16 13:19
Analytical Method Seq Number: PSS Sample ID:	: SW-846 8082 A 135705 16090921-006		Matrix:	Soil	Prep Method Date Prep	
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
Decachlorobipheny Tetrachloro-m-xyler		101 81		61-150 42-142	% %	09/12/16 17:11 09/12/16 17:11
Analytical Method Seq Number: PSS Sample ID:	: SW-846 8151 A 135724 16090921-006		Matrix:	Soil	Prep Method Date Prep	_
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
2,4-Dichlorophenyla	acetic Acid	123		61-144	%	09/14/16 00:56
Analytical Method Seq Number: PSS Sample ID:	: SW-846 8081 B 135800 16090921-006		Matrix:	Soil	Prep Method Date Prep	
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
Decachlorobipheny Tetrachloro-m-xyler		107 94		23-165 31-145	% %	09/14/16 22:31 09/14/16 22:31

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Analytical Method Seq Number: PSS Sample ID:	135705 16090921-007		Matrix:	Soil	Prep Method: Date Prep:	
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
Decachlorobipheny Tetrachloro-m-xylei		104 92		61-150 42-142	% %	09/12/16 17:40 09/12/16 17:40
Analytical Method Seq Number: PSS Sample ID:	: SW-846 8151 A 135724 16090921-007		Matrix:	Soil	Prep Method: Date Prep:	
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
2,4-Dichlorophenyla	acetic Acid	108		61-144	%	09/14/16 01:28
Analytical Method Seq Number: PSS Sample ID:	1: SW-846 8081 B 135800 16090921-007		Matrix:	Soil	Prep Method: Date Prep:	
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
Decachlorobipheny Tetrachloro-m-xylei		127 118		23-165 31-145	% %	09/14/16 17:52 09/14/16 17:52
Analytical Method Seq Number: PSS Sample ID:	: SW-846 8015 C 135866 16090921-008		Matrix:	Soil	Prep Method: Date Prep:	
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
o-Terphenyl		75		34-133	%	09/16/16 04:18
Analytical Method Seq Number: PSS Sample ID:	1: SW-846 8015C 135716 16090921-008		Matrix:	Soil	Prep Method: Date Prep:	
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
a,a,a-Trifluorotolue	ne	84		50-122	%	09/13/16 02:30

Icor Ltd. Robinson Terminal North

		IN.	001115011	ı emm	iai ivoitii		
Analytical Method: Seq Number: PSS Sample ID:	SW-846 8260 B 135849 16090921-008		Matrix:	Soil		Prep Method Date Prep	
Surrogate		%Rec	Flag		Limits	Units	Analysis Date
4-Bromofluorobenze Dibromofluorometha Toluene-D8		99 93 100			82-126 92-113 94-105	% % %	09/16/16 10:11 09/16/16 10:11 09/16/16 10:11
Analytical Method: Seq Number: PSS Sample ID:	SW-846 8270 C 135707 16090921-009		Matrix:	Soil		Prep Method Date Prep	
Surrogate		%Rec	Flag		Limits	Units	Analysis Date
2-Fluorobiphenyl 2-Fluorophenol Nitrobenzene-d5 Phenol-d6 Terphenyl-D14 2,4,6-Tribromophen	ol	78 77 81 77 105 74			32-107 34-113 35-123 34-120 46-154 31-113	% % % % %	09/12/16 17:14 09/12/16 17:14 09/12/16 17:14 09/12/16 17:14 09/12/16 17:14 09/12/16 17:14
Analytical Method: Seq Number: PSS Sample ID:	SW-846 8015 C 135866 16090921-009		Matrix:	Soil		Prep Methoc Date Prep	
Surrogate		%Rec	Flag		Limits	Units	Analysis Date
o-Terphenyl		88			34-133	%	09/16/16 04:43
Analytical Method: Seq Number: PSS Sample ID:	SW-846 8015C 135716 16090921-009		Matrix:	Soil		Prep Methoc Date Prep	d: SW5030 b: 09/12/2016
Surrogate		%Rec	Flag		Limits	Units	Analysis Date
a,a,a-Trifluorotoluer	ne	95			50-122	%	09/13/16 03:00
Analytical Method: Seq Number: PSS Sample ID:	SW-846 8260 B 135849 16090921-009		Matrix:	Soil		Prep Method Date Prep	
Surrogate		%Rec	Flag		Limits	Units	Analysis Date
4-Bromofluorobenze Dibromofluorometha Toluene-D8		109 94 101			82-126 92-113 94-105	% % %	09/16/16 09:32 09/16/16 09:32 09/16/16 09:32

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Analytical Method	I: SW-846 8270 C				Prep Method	l: SW3510C
Seq Number:	135757		Matrix:	Ground Water	Date Prep	o: 09/13/2016
PSS Sample ID:	16090921-010				·	
		a. =				
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
2-Fluorobiphenyl		65		35-107	%	09/14/16 07:16
2-Fluorophenol		63		32-106	%	09/14/16 07:16
Nitrobenzene-d5		66		34-123	%	09/14/16 07:16
Phenol-d6		65		36-111	%	09/14/16 07:16
Terphenyl-D14		83		43-143	%	09/14/16 07:16
2,4,6-Tribromophe	nol	75		26-122	%	09/14/16 07:16
Analytical Method	I: SW-846 8015 C				Prep Method	I: SW3510C
Seq Number:	135784		Matrix:	Ground Water	Date Prep	o: 09/14/2016
PSS Sample ID:	16090921-010					
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
o-Terphenyl		81		46-111	%	09/15/16 18:42
Analytical Method Seq Number: PSS Sample ID:	I: SW-846 8260 B 135763 16090921-010		Matrix:	Ground Water	Prep Methoo Date Prep	
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
4-Bromofluorobenz	zene	100		86-111	%	09/14/16 03:59
Dibromofluorometh	nane	99		91-119	%	09/14/16 03:59
Toluene-D8		103		90-117	%	09/14/16 03:59
Analytical Method Seq Number: PSS Sample ID:	I: SW-846 8015C 135835 16090921-010		Matrix:	Ground Water	Prep Method Date Prep	
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
a,a,a-Trifluorotolue	ene	71		55-114	%	09/15/16 13:45

QC Summary 16090921

Icor Ltd. Robinson Terminal North

Analytical Method: SW-846 8270 C

Seq Number: 135757 Matrix: Ground Water

Prep Method: SW3510C Date Prep: 09/13/2016

PSS Sample ID: 16090921-011

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
2-Fluorobiphenyl	77		35-107	%	09/14/16 07:45
2-Fluorophenol	73		32-106	%	09/14/16 07:45
Nitrobenzene-d5	78		34-123	%	09/14/16 07:45
Phenol-d6	77		36-111	%	09/14/16 07:45
Terphenyl-D14	88		43-143	%	09/14/16 07:45
2,4,6-Tribromophenol	91		26-122	%	09/14/16 07:45

Analytical Method: SW-846 8270 C Seq Number: 135843

PSS Sample ID: 16090921-013

Prep Method: SW3510C Matrix: Ground Water Date Prep: 09/14/2016

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
2-Fluorobiphenyl	79		35-107	%	09/15/16 01:00
2-Fluorophenol	75		32-106	%	09/15/16 01:00
Nitrobenzene-d5	81		34-123	%	09/15/16 01:00
Phenol-d6	81		36-111	%	09/15/16 01:00
Terphenyl-D14	97		43-143	%	09/15/16 01:00
2,4,6-Tribromophenol	92		26-122	%	09/15/16 01:00

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria

H= Recovery of BS,BSD or both exceeded the laboratory control limits L = Recovery of BS,BSD or both below the laboratory control limits

QC Summary 16090921

Icor Ltd. Robinson Terminal North

Analytical Method: EPA 1664 A

Seq Number: 135809 Matrix: Water

MB Sample Id: 135809-1-BLK LCS Sample Id: 135809-1-BKS LCSD Sample Id: 135809-1-BSD

RPD LCS LCS %RPD Units MB Spike LCSD LCSD Limits Analysis **Parameter** Flag Result Limit Date Result Amount %Rec %Rec Result **TPH** <2.000 20.00 15.30 16.20 81 64-132 28 mg/L 09/15/16 12:59

Analytical Method: EPA 1664 A

Seq Number: 135811 Matrix: Water

MB Sample Id: 135811-1-BLK LCS Sample Id: 135811-1-BKS LCSD Sample Id: 135811-1-BSD

%RPD LCS LCS RPD Units MB LCSD LCSD Spike Limits Analysis **Parameter** Flag Result Amount Result %Rec Limit Date Result %Rec Oil & Grease, Total Recovered < 2.000 40.00 36.50 37.10 93 78-114 11 09/15/16 13:14 mg/L

Analytical Method: SW-846 6020 A Prep Method: SW3050B Seq Number: 135808 Matrix: Solid Date Prep: 09/14/16

MB Sample Id: 62534-1-BLK LCS Sample Id: 62534-1-BKS

MB Sample Id:	62534-1-BLK		LCS San	nple ld:	62534-1-BKS				
Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec		Limits	Units	Analysis Date	Flag
Antimony	<2.109	16.87	18.76	111		80-120	mg/kg	09/14/16 19:33	3
Arsenic	<0.4218	16.87	18.76	111		80-120	mg/kg	09/15/16 15:02	2
Beryllium	<2.109	16.87	18.48	110		80-120	mg/kg	09/14/16 19:33	3
Cadmium	<2.109	16.87	16.82	100		80-120	mg/kg	09/14/16 19:33	3
Chromium	<2.109	16.87	17.54	104		80-120	mg/kg	09/14/16 19:33	3
Copper	<2.109	16.87	18.87	112		80-120	mg/kg	09/14/16 19:33	3
Lead	<2.109	16.87	17.36	103		80-120	mg/kg	09/14/16 19:33	3
Mercury	< 0.08437	0.4218	0.4134	98		80-120	mg/kg	09/14/16 19:33	3
Nickel	<2.109	16.87	17.91	106		80-120	mg/kg	09/14/16 19:33	3
Selenium	<2.109	16.87	16.65	99		80-120	mg/kg	09/14/16 19:33	3
Silver	<2.109	16.87	17.21	102		80-120	mg/kg	09/14/16 19:33	3
Thallium	<1.687	16.87	14.87	88		80-120	mg/kg	09/14/16 19:33	3
Zinc	<8.437	84.37	87.15	103		80-120	mg/kg	09/14/16 19:33	3

QC Summary 16090921

Icor Ltd. Robinson Terminal North

Analytical Method: SW-846 6020 APrep Method: SW3050BSeq Number:135808Matrix: SoilDate Prep: 09/14/16

Parent Sample Id: 16090921-002 MS Sample Id: 16090921-002 S MSD Sample Id: 16090921-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Antimony	<2.287	18.29	11.74	64	17.17	71	75-125	38	30	mg/kg	09/14/16 19:46	XF
Arsenic	8.790	18.29	30.92	121	33.84	104	75-125	9	30	mg/kg	09/14/16 19:46	Ė
Beryllium	<2.287	18.29	18.92	103	23.39	97	75-125	21	30	mg/kg	09/14/16 19:46	Ė
Cadmium	<2.287	18.29	18.06	99	22.53	94	75-125	22	30	mg/kg	09/14/16 19:46	i
Chromium	24.52	18.29	42.74	100	46.71	92	75-125	9	30	mg/kg	09/14/16 19:46	Ė
Copper	46.85	18.29	72.81	142	57.94	46	75-125	23	30	mg/kg	09/14/16 19:46	X
Lead	13.51	18.29	36.33	125	38.41	103	75-125	6	30	mg/kg	09/14/16 19:46	Ė
Mercury	< 0.09147	0.4573	0.5122	112	0.6022	100	75-125	16	30	mg/kg	09/14/16 19:46	Ė
Nickel	18.45	18.29	48.25	163	48.81	126	75-125	1	30	mg/kg	09/14/16 19:46	X
Selenium	<2.287	18.29	16.02	88	21.32	89	75-125	28	30	mg/kg	09/14/16 19:46	Ė
Silver	<2.287	18.29	18.00	98	22.93	95	75-125	24	30	mg/kg	09/14/16 19:46	ř
Thallium	<1.829	18.29	16.15	88	20.95	87	75-125	26	20	mg/kg	09/14/16 19:46	Ė
Zinc	749.1	91.47	1208	502	1194	370	75-125	1	30	mg/kg	09/14/16 19:46	X

 Analytical Method: SW-846 8081 B
 Prep Method: SW3550C

 Seq Number:
 135800
 Matrix: Solid
 Date Prep: 09/12/16

 MB Sample Id:
 62498-1-BLK
 LCS Sample Id: 62498-1-BKS
 LCSD Sample Id: 62498-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
alpha-BHC	<3.968	19.84	19.18	97	18.68	95	58-120	3	25	ug/kg	09/14/16 22:31	
gamma-BHC (Lindane)	<3.968	19.84	18.23	92	17.88	91	57-120	2	25	ug/kg	09/14/16 22:31	
beta-BHC	<3.968	19.84	19.34	97	18.15	92	59-118	6	25	ug/kg	09/14/16 22:31	
delta-BHC	<3.968	19.84	21.21	107	20.46	104	52-123	4	25	ug/kg	09/14/16 22:31	
Heptachlor	<3.968	19.84	19.10	96	18.46	94	44-130	3	25	ug/kg	09/14/16 22:31	
Aldrin	<3.968	19.84	18.93	95	18.42	93	59-123	3	25	ug/kg	09/14/16 22:31	
Heptachlor epoxide	<3.968	19.84	20.08	101	19.52	99	61-119	3	25	ug/kg	09/14/16 22:31	
gamma-Chlordane	<3.968	19.84	20.82	105	20.18	102	61-122	3	25	ug/kg	09/14/16 22:31	
alpha-Chlordane	<3.968	19.84	18.81	95	18.25	93	61-123	3	25	ug/kg	09/14/16 22:31	
4,4-DDE	<3.968	19.84	17.61	89	16.48	84	49-131	7	25	ug/kg	09/14/16 22:31	
Endosulfan I	<3.968	19.84	22.43	113	22.08	112	66-118	2	25	ug/kg	09/14/16 22:31	
Dieldrin	<3.968	19.84	19.98	101	19.35	98	60-122	3	25	ug/kg	09/14/16 22:31	
Endrin	<3.968	19.84	21.01	106	19.56	99	39-133	7	25	ug/kg	09/14/16 22:31	
4,4-DDD	<3.968	19.84	20.38	103	19.70	100	44-130	3	25	ug/kg	09/14/16 22:31	
Endosulfan II	<3.968	19.84	24.03	121	22.90	116	59-118	5	25	ug/kg	09/14/16 22:31	Н
4,4-DDT	<3.968	19.84	23.59	119	21.58	109	28-134	9	25	ug/kg	09/14/16 22:31	
Endrin aldehyde	<3.968	19.84	21.35	108	20.31	103	51-129	5	25	ug/kg	09/14/16 22:31	
Methoxychlor	<3.968	19.84	21.59	109	19.78	100	33-135	9	25	ug/kg	09/14/16 22:31	
Endosulfan sulfate	<3.968	19.84	25.77	130	24.43	124	54-124	5	25	ug/kg	09/14/16 22:31	Н
Endrin ketone	<3.968	19.84	22.82	115	21.82	111	58-123	4	25	ug/kg	09/14/16 22:31	
Surrogate	MB %Rec	MB Flag			LCS Flag	LCS Resu			mits	Units	Analysis Date	

127

98

Decachlorobiphenyl

Tetrachloro-m-xylene

109

111

23-165

31-145

117

95

09/14/16 22:31

09/14/16 22:31

QC Summary 16090921

Icor Ltd. Robinson Terminal North

Analytical Method	: SW-846 8082 A			Prep Method:	SW3550C
Seq Number:	135705	Matrix:	Solid	Date Prep:	09/12/16
MB Sample Id:	62499-1-BLK	LCS Sample Id:	62499-1-BKS	LCSD Sample Id:	62499-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
PCB-1016	< 0.04975	0.4975	0.4021	81	0.4006	81	60-110	0	25	mg/kg	09/12/16 16:42	2
PCB-1260	< 0.04975	0.4975	0.4793	96	0.4760	96	60-98	1	25	mg/kg	09/12/16 16:42	2
Surrogate	МВ	МВ	L	cs I	LCS	LCS	D LCS	D Li	mits	Units	Analysis	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units	Analysis Date
Decachlorobiphenyl	110		109		111		61-150	%	09/12/16 16:42
Tetrachloro-m-xylene	99		98		100		42-142	%	09/12/16 16:42

Analytical Method: SW-846 8151 A Prep Method: SW8151A_PREP

 Seq Number:
 135724
 Matrix:
 Solid
 Date Prep:
 09/12/16

 MB Sample Id:
 62477-1-BLK
 LCS Sample Id:
 62477-1-BKS
 LCSD Sample Id:
 62477-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Dalapon	<493.6	1481	1096	74	1186	80	66-117	8	25	ug/kg	09/13/16 10:23	3
Dicamba	<19.74	59.23	66.44	112	66.50	112	73-126	0	25	ug/kg	09/13/16 10:23	3
MCPP	<19740	59230	51110	86	50840	86	51-138	1	25	ug/kg	09/13/16 10:23	3
MCPA	<19740	59230	51210	86	50770	85	70-133	1	25	ug/kg	09/13/16 10:23	3
Dichloroprop	<197.4	592.3	664.5	112	650.1	109	88-162	2	25	ug/kg	09/13/16 10:23	3
2,4-D	<197.4	592.3	668.5	113	654.7	110	66-133	2	25	ug/kg	09/13/16 10:23	3
2,4,5-TP (Silvex)	<19.74	59.23	61.11	103	58.37	98	71-126	5	25	ug/kg	09/13/16 10:23	3
2,4,5-T	<19.74	59.23	61.20	103	57.98	98	66-125	5	25	ug/kg	09/13/16 10:23	3
Dinoseb	<98.72	296.2	245.8	83	233.9	79	52-101	5	25	ug/kg	09/13/16 10:23	3
2,4-DB	<197.4	592.3	625.5	106	586.1	99	63-134	7	25	ug/kg	09/13/16 10:23	3
Surrogate	MB %Rec	MB Flag		.CS sult	LCS Flag	LCS Resu			mits	Units	Analysis Date	
2,4-Dichlorophenylacetic Acid	97		9	98		104	ļ	61	I-144	%	09/13/16 10:2	3

 Analytical Method: SW-846 8015 C
 Prep Method: SW3510C

 Seq Number:
 135784
 Matrix: Water
 Date Prep: 09/14/16

 MB Sample Id:
 62528-1-BLK
 LCS Sample Id: 62528-1-BKS
 LCSD Sample Id: 62528-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
TPH-DRO (Diesel Range Organics)	<0.1000	1.000	0.9247	92	0.8985	90	41-123	3	20	mg/L	09/14/16 13:11	
Surrogate	MB %Rec	MB Flag	_		LCS Flag	LCS Resu			mits	Units	Analysis Date	
o-Terphenyl	84		8	39		87		46	5-111	%	09/14/16 13:11	

Icor Ltd. Robinson Terminal North

Analytical Method:	: SW-846 8015 C			Prep Method:	SW3550C
Seq Number:	135866	Matrix:	Solid	Date Prep:	09/14/16
MDO	00500 4 DLI/	LCC Cample Ide	COEOO 4 DIZO	LCCD Comple Ide	60E00 4 DCI

LCS Sample Id: 62529-1-BKS LCSD Sample Id: 62529-1-BSD MB Sample Id: 62529-1-BLK

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
TPH-DRO (Diesel Range Organics)	<10.11	33.70	28.99	86	34.10	102	54-123	16	25	mg/kg	09/16/16 00:58	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units	Analysis Date
o-Terphenyl	86		82		96		34-133	%	09/16/16 00:58

QC Summary 16090921

Icor Ltd. Robinson Terminal North

 Analytical Method: SW-846 8270 C
 Prep Method: SW3550C

 Seq Number:
 135707
 Matrix: Solid
 Date Prep: 09/12/16

 MB Sample Id:
 62476-1-BLK
 LCS Sample Id: 62476-1-BKS
 LCSD Sample Id: 62476-1-BSD

MB Sample Id: 6247	76-1-BLK		LCS San	nple Id:	62476-1-	BKS		LCSD	Sample	e ld: 624	176-1-BSD	
Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Acenaphthene	<166.2	1330	1077	81	1085	82	60-116	1	25	ug/kg	09/12/16 13:29	Э
Acenaphthylene	<166.2	1330	1120	84	1134	85	61-112	1	25	ug/kg	09/12/16 13:29	Э
Acetophenone	<166.2	1330	1069	80	1081	81	57-114	1	25	ug/kg	09/12/16 13:29	Э
Anthracene	<166.2	1330	1131	85	1138	86	66-115	1	25	ug/kg	09/12/16 13:29	Э
Atrazine	<166.2	1330	1062	80	1083	81	7-109	2	25	ug/kg	09/12/16 13:29	Э
Benzo(a)anthracene	<166.2	1330	1199	90	1207	91	71-113	1	25	ug/kg	09/12/16 13:29	Э
Benzo(a)pyrene	<166.2	1330	1251	94	1273	96	69-118	2	25	ug/kg	09/12/16 13:29	9
Benzo(b)fluoranthene	<166.2	1330	1259	95	1216	91	65-126	3	25	ug/kg	09/12/16 13:29	Э
Benzo(g,h,i)perylene	<166.2	1330	1093	82	1062	80	69-112	3	25	ug/kg	09/12/16 13:29	Э
Benzo(k)fluoranthene	<166.2	1330	1208	91	1337	101	57-129	10	25	ug/kg	09/12/16 13:29	Э
Biphenyl (Diphenyl)	<166.2	1330	1045	79	1048	79	62-117	0	25	ug/kg	09/12/16 13:29	Э
Butyl benzyl phthalate	<166.2	1330	1432	108	1461	110	81-111	2	25	ug/kg	09/12/16 13:29	Э
bis(2-chloroethoxy) methane	<166.2	1330	1032	78	1039	78	56-119	1	25	ug/kg	09/12/16 13:29	9
bis(2-chloroethyl) ether	<166.2	1330	1029	77	1013	76	55-107	2	25	ug/kg	09/12/16 13:29	Э
bis(2-chloroisopropyl) ether	<166.2	1330	963.8	72	956.4	72	44-103	1	25	ug/kg	09/12/16 13:29	Э
bis(2-ethylhexyl) phthalate	<166.2	1330	1441	108	1457	110	84-109	1	25	ug/kg	09/12/16 13:29	
4-Bromophenylphenyl ether	<166.2	1330	1097	82	1094	82	63-125	0	25	ug/kg	09/12/16 13:29	Э
Di-n-butyl phthalate	<166.2	1330	1247	94	1232	93	76-110	1	25	ug/kg	09/12/16 13:29	9
Carbazole	<166.2	1330	1178	89	1182	89	58-133	0	25	ug/kg	09/12/16 13:29	
Caprolactam	<166.2	1330	1128	85	1159	87	51-122	3	25	ug/kg	09/12/16 13:29	
4-Chloro-3-methyl phenol	<166.2	1330	1186	89	1207	91	74-119	2	25	ug/kg	09/12/16 13:29	
4-Chloroaniline	<166.2	1330	992.7	75	1006	76	45-107	1	25	ug/kg	09/12/16 13:29	
2-Chloronaphthalene	<166.2	1330	1030	77	1039	78	56-113	1	25	ug/kg	09/12/16 13:29	
2-Chlorophenol	<166.2	1330	1057	79	1069	80	59-113	1	25	ug/kg	09/12/16 13:29	
4-Chlorophenyl Phenyl ethe		1330	1029	77	1050	79	62-111	2	25	ug/kg	09/12/16 13:29	
Chrysene	<166.2	1330	1175	88	1175	88	72-114	0	25	ug/kg	09/12/16 13:29	
Dibenz(a,h)Anthracene	<166.2	1330	1290	97	1255	94	72-110	3	25	ug/kg	09/12/16 13:29	
Dibenzofuran	<166.2	1330	1083	81	1102	83	62-118	2	25	ug/kg	09/12/16 13:29	
3,3-Dichlorobenzidine	<166.2	1330	1513	114	1523	115	66-141	1	25	ug/kg	09/12/16 13:29	
2,4-Dichlorophenol	<166.2	1330	1120	84	1128	85	68-118	1	25	ug/kg	09/12/16 13:29	
Diethyl phthalate	<166.2	1330	1171	88	1190	89	61-113	2	25	ug/kg	09/12/16 13:29	
Dimethyl phthalate	<166.2	1330	1161	87	1179	89	69-109	2	25	ug/kg	09/12/16 13:29	
2,4-Dimethylphenol	<166.2	1330	1087	82	1087	82	57-122	0	25	ug/kg	09/12/16 13:29	
4,6-Dinitro-2-methyl phenol	<166.2	1330	959.8	72	1008	76	50-134	5	25	ug/kg	09/12/16 13:29	
2,4-Dinitrophenol	<332.4	1330	611	46	673.4	51	24-144	10	25	ug/kg	09/12/16 13:29	
2,4-Dinitrotoluene	<166.2	1330	1112	84	1125	85	61-124	1	25	ug/kg	09/12/16 13:29	
2,6-Dinitrotoluene	<166.2	1330	1146	86	1161	87	59-124	1	25	ug/kg	09/12/16 13:29	
Fluoranthene	<166.2	1330	1164	88	1149	86	69-119	1	25	ug/kg	09/12/16 13:29	
Fluorene	<166.2	1330	1117	84	1129	85	65-115	1	25	ug/kg	09/12/16 13:29	
Hexachlorobenzene	<166.2	1330	1082	81	1092	82	63-118	1	25	ug/kg	09/12/16 13:29	
Hexachlorobutadiene	<166.2		1035	78	1031	78	55-120	0	25	ug/kg	09/12/16 13:29	
Hexachlorocyclopentadiene	<166.2		1030	77	1018	77	29-138	1	25	ug/kg	09/12/16 13:29	
Hexachloroethane	<166.2		1044	78	1047	79	54-110	0	25	ug/kg	09/12/16 13:29	
Indeno(1,2,3-c,d)Pyrene	<166.2	1330	1060	80	1008	76	60-127	5	25	ug/kg	09/12/16 13:29	
Isophorone	<166.2	1330	1149	86	1152	87	57-116	0	25 25	ug/kg ug/kg	09/12/16 13:29	
2-Methylnaphthalene	<166.2		1094	82	1102	83	70-109	1	25 25	ug/kg ug/kg	09/12/16 13:29	
2-Methyl phenol	<166.2	1330	1094	82	1114	84	59-118	2	25 25	ug/kg ug/kg	09/12/16 13:29	
3&4-Methylphenol	<166.2		1068	80	1089	82	59-116	2	25 25	ug/kg ug/kg	09/12/16 13:29	
Naphthalene	<166.2		1000	77	1009	77	59-113	1	25 25	ug/kg ug/kg	09/12/16 13:29	
2-Nitroaniline	<166.2		1020	82	1110	83	51-116	2	25 25	ug/kg ug/kg	09/12/16 13:29	
3-Nitroaniline	<166.2		1090	62 79	1084		57-111	3	25 25		09/12/16 13:29	
J-1 VILL DATHILLE	~100.Z	1330	1057	19	1004	02	51-111	3	20	ug/kg	03/12/10 13.2	,

Analytical Method	: SW-846 8270 C			Prep Method:	SW3550C
Seq Number:	135707	Matrix:	Solid	Date Prep:	09/12/16
MB Sample Id:	62476-1-BLK	LCS Sample Id:	62476-1-BKS	LCSD Sample Id:	62476-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
4-Nitroaniline	<166.2	1330	1135	85	1182	89	55-125	4	25	ug/kg	09/12/16 13:29	
Nitrobenzene	<166.2	1330	989.7	74	995.7	75	53-110	1	25	ug/kg	09/12/16 13:29	
2-Nitrophenol	<166.2	1330	1131	85	1154	87	58-124	2	25	ug/kg	09/12/16 13:29	
4-Nitrophenol	<166.2	1330	1062	80	1096	82	51-116	3	25	ug/kg	09/12/16 13:29	
N-Nitrosodi-n-propyl amine	<166.2	1330	1090	82	1114	84	60-98	2	25	ug/kg	09/12/16 13:29	
N-Nitrosodiphenylamine	<166.2	1330	1136	85	1147	86	65-111	1	25	ug/kg	09/12/16 13:29	
Di-n-octyl phthalate	<166.2	1330	1364	103	1456	109	69-120	7	25	ug/kg	09/12/16 13:29	
Pentachlorophenol	<166.2	1330	1050	79	1074	81	56-124	2	25	ug/kg	09/12/16 13:29	
Phenanthrene	<166.2	1330	1100	83	1114	84	67-117	1	25	ug/kg	09/12/16 13:29	
Phenol	<166.2	1330	1034	78	1046	79	58-114	1	25	ug/kg	09/12/16 13:29	
Pyrene	<166.2	1330	1198	90	1237	93	77-111	3	25	ug/kg	09/12/16 13:29	
Pyridine	<166.2	1330	914.2	69	914.2	69	37-110	0	25	ug/kg	09/12/16 13:29	
2,4,5-Trichlorophenol	<166.2	1330	1181	89	1208	91	64-114	2	25	ug/kg	09/12/16 13:29	
2,4,6-Trichlorophenol	<166.2	1330	1131	85	1158	87	60-125	2	25	ug/kg	09/12/16 13:29	
Surrogate	MB %Rec	MB Flag			LCS Flag	LCS Resu			mits	Units	Analysis Date	
2-Fluorobiphenyl	88		8	85		84		32	2-107	%	09/12/16 13:29	
2-Fluorophenol	92		8	85		82		34	I-113	%	09/12/16 13:29	
Nitrobenzene-d5	91		8	88		86		35	5-123	%	09/12/16 13:29	
Phenol-d6	89		8	84		83		34	I-120	%	09/12/16 13:29	
Terphenyl-D14	108		1	03		104	1	46	6-154	%	09/12/16 13:29	
2,4,6-Tribromophenol	65		9	91		90		31	I-113	%	09/12/16 13:29	

QC Summary 16090921

Icor Ltd. Robinson Terminal North

 Analytical Method: SW-846 8270 C
 Prep Method: SW3510C

 Seq Number:
 135757
 Matrix: Water
 Date Prep: 09/13/16

 MB Sample Id:
 62510-1-BLK
 LCS Sample Id: 62510-1-BKS
 LCSD Sample Id: 62510-1-BSD

MB Sample Id:	ole Id: 62510-1-BLK LCS Sample Id: 62510-1-BKS LCSD Sample Id: 62510-1-BSD											
Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Acenaphthene	<5.000	40.00	33.01	83	31.48	79	67-110	5	20	ug/L	09/13/16 23:39	
Acenaphthylene	<5.000	40.00	34.34	86	32.80	82	69-106	5	20	ug/L	09/13/16 23:39)
Acetophenone	<5.000	40.00	33.42	84	31.72	79	67-107	5	20	ug/L	09/13/16 23:39)
Anthracene	<5.000	40.00	35.28	88	33.12	83	79-108	6	20	ug/L	09/13/16 23:39)
Atrazine	<5.000	40.00	9.240	23	8.700	22	17-98	6	20	ug/L	09/13/16 23:39)
Benzo(a)anthracene	<5.000	40.00	37.32	93	34.77	87	76-109	7	20	ug/L	09/13/16 23:39)
Benzo(a)pyrene	<5.000	40.00	38.92	97	36.43	91	76-114	7	20	ug/L	09/13/16 23:39)
Benzo(b)fluoranthene	<5.000	40.00	37.80	95	35.00	88	67-121	8	20	ug/L	09/13/16 23:39)
Benzo(g,h,i)perylene	<5.000	40.00	38.65	97	37.75	94	75-107	2	20	ug/L	09/13/16 23:39)
Benzo(k)fluoranthene	<5.000	40.00	39.03	98	33.73	84	62-132	15	20	ug/L	09/13/16 23:39)
Biphenyl (Diphenyl)	<5.000	40.00	33.71	84	32.14	80	71-108	5	20	ug/L	09/13/16 23:39)
Butyl benzyl phthalate	<5.000	40.00	41.63	104	34.47	86	74-117	19	20	ug/L	09/13/16 23:39)
bis(2-chloroethoxy) met	hane <5.000	40.00	31.39	78	30.42	76	69-111	3	20	ug/L	09/13/16 23:39)
bis(2-chloroethyl) ether	<5.000	40.00	31.03	78	29.87	75	62-103	4	20	ug/L	09/13/16 23:39)
bis(2-chloroisopropyl) e	ther <5.000	40.00	29.31	73	27.87	70	50-103	5	20	ug/L	09/13/16 23:39)
bis(2-ethylhexyl) phthal	ate <5.000	40.00	42.88	107	36.30	91	78-114	17	20	ug/L	09/13/16 23:39)
4-Bromophenylphenyl	ether <5.000	40.00	33.73	84	32.18	80	82-108	5	20	ug/L	09/13/16 23:39) L
Di-n-butyl phthalate	<5.000	40.00	39.42	99	36.92	92	71-115	7	20	ug/L	09/13/16 23:39)
Carbazole	<5.000	40.00	35.07	88	33.14	83	52-134	6	20	ug/L	09/13/16 23:39)
Caprolactam	<5.000	40.00	36.54	91	33.61	84	50-125	8	20	ug/L	09/13/16 23:39)
4-Chloro-3-methyl pher	ol <5.000	40.00	37.69	94	35.71	89	72-121	5	20	ug/L	09/13/16 23:39)
4-Chloroaniline	<5.000	40.00	31.57	79	29.96	75	54-103	5	20	ug/L	09/13/16 23:39)
2-Chloronaphthalene	<5.000	40.00	31.73	79	30.41	76	66-105	4	20	ug/L	09/13/16 23:39)
2-Chlorophenol	<5.000	40.00	32.09	80	30.77	77	63-109	4	20	ug/L	09/13/16 23:39)
4-Chlorophenyl Phenyl	ether <5.000	40.00	32.89	82	31.29	78	73-100	5	20	ug/L	09/13/16 23:39)
Chrysene	<5.000	40.00	36.47	91	34.03	85	78-111	7	20	ug/L	09/13/16 23:39)
Dibenz(a,h)Anthracene	<5.000	40.00	39.74	99	39.54	99	76-106	1	20	ug/L	09/13/16 23:39)
Dibenzofuran	<5.000	40.00	33.61	84	31.97	80	70-111	5	20	ug/L	09/13/16 23:39)
3,3-Dichlorobenzidine	<5.000	40.00	50.58	126	49.22	123	79-132	3	20	ug/L	09/13/16 23:39)
2,4-Dichlorophenol	<5.000	40.00	34.77	87	33.41	84	65-118	4	20	ug/L	09/13/16 23:39)
Diethyl phthalate	<5.000	40.00	36.81	92	34.62	87	60-114	6	20	ug/L	09/13/16 23:39)
Dimethyl phthalate	<5.000	40.00	36.28	91	34.06	85	66-107	6	20	ug/L	09/13/16 23:39)
2,4-Dimethylphenol	<5.000	40.00	33.01	83	31.42	79	60-119	5	20	ug/L	09/13/16 23:39	
4,6-Dinitro-2-methyl pho	enol <5.000	40.00	28.37	71	31.27	78	60-130	10	20	ug/L	09/13/16 23:39)
2,4-Dinitrophenol	<10.00	40.00	18.53	46	21.26	53	36-136	14	20	ug/L	09/13/16 23:39)
2,4-Dinitrotoluene	<5.000	40.00	34.39	86	32.55	81	70-119	5	20	ug/L	09/13/16 23:39)
2,6-Dinitrotoluene	<5.000	40.00	35.34	88	33.10	83	68-117	7	20	ug/L	09/13/16 23:39)
Fluoranthene	<5.000	40.00	37.43	94	35.98	90	79-112	4	20	ug/L	09/13/16 23:39)
Fluorene	<5.000	40.00	35.16	88	33.44	84	71-109	5	20	ug/L	09/13/16 23:39	
Hexachlorobenzene	<5.000	40.00	34.45	86	32.71	82	76-110	5	20	ug/L	09/13/16 23:39)
Hexachlorobutadiene	<5.000	40.00	32.17	80	31.39	78	64-113	2	20	ug/L	09/13/16 23:39)
Hexachlorocyclopentad	iene <5.000	40.00	27.75	69	31.33	78	49-124	12	20	ug/L	09/13/16 23:39)
Hexachloroethane	<5.000	40.00	31.26	78	30.50	76	62-105	2	20	ug/L	09/13/16 23:39)
Indeno(1,2,3-c,d)Pyren		40.00	36.70	92	35.67	89	69-120	3	20	ug/L	09/13/16 23:39	
Isophorone	<5.000	40.00	35.32	88	33.84	85	68-108	4	20	ug/L	09/13/16 23:39	
2-Methylnaphthalene	<5.000	40.00	34.55	86	32.93	82	64-117	5	20	ug/L	09/13/16 23:39	
2-Methyl phenol	<5.000	40.00	33.90	85	32.12	80	67-111	5	20	ug/L	09/13/16 23:39	
3&4-Methylphenol	<5.000	40.00	33.44	84	31.90	80	67-107	5	20	ug/L	09/13/16 23:39	
Naphthalene	<5.000	40.00	31.68	79	30.33	76	65-103	4	20	ug/L	09/13/16 23:39	
2-Nitroaniline	<5.000	40.00	33.61	84	31.39	78	59-114	7	20	ug/L	09/13/16 23:39	
3-Nitroaniline	<5.000	40.00	33.21	83	31.11	78		7	20	ug/L	09/13/16 23:39	
										-		

Analytical Method	: SW-846 8270 C			Prep Method:	SW3510C
Seq Number:	135757	Matrix:	Water	Date Prep:	09/13/16
MB Sample Id:	62510-1-BLK	LCS Sample Id:	62510-1-BKS	LCSD Sample Id:	62510-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
4-Nitroaniline	<5.000	40.00	35.11	88	32.86	82	51-125	7	20	ug/L	09/13/16 23:39	
Nitrobenzene	<5.000	40.00	30.34	76	28.95	72	60-107	5	20	ug/L	09/13/16 23:39	
2-Nitrophenol	<5.000	40.00	33.65	84	32.78	82	65-119	3	20	ug/L	09/13/16 23:39	
4-Nitrophenol	<5.000	40.00	35.78	89	33.85	85	46-121	6	20	ug/L	09/13/16 23:39	
N-Nitrosodi-n-propyl amine	<5.000	40.00	33.55	84	32.07	80	60-98	5	20	ug/L	09/13/16 23:39	
N-Nitrosodiphenylamine	<5.000	40.00	35.08	88	32.90	82	68-106	6	20	ug/L	09/13/16 23:39	
Di-n-octyl phthalate	<5.000	40.00	41.63	104	30.03	75	69-120	32	20	ug/L	09/13/16 23:39	F
Pentachlorophenol	<5.000	40.00	33.00	83	32.09	80	63-119	3	20	ug/L	09/13/16 23:39	
Phenanthrene	<5.000	40.00	34.81	87	32.53	81	73-109	7	20	ug/L	09/13/16 23:39	
Phenol	<5.000	40.00	32.11	80	30.49	76	65-110	5	20	ug/L	09/13/16 23:39	
Pyrene	<5.000	40.00	33.79	84	27.81	70	78-111	19	20	ug/L	09/13/16 23:39	L
Pyridine	<5.000	40.00	26.81	67	25.55	64	47-105	5	20	ug/L	09/13/16 23:39	
2,4,5-Trichlorophenol	<5.000	40.00	36.19	90	34.56	86	69-114	5	20	ug/L	09/13/16 23:39	
2,4,6-Trichlorophenol	<5.000	40.00	33.30	83	31.50	79	68-118	6	20	ug/L	09/13/16 23:39	
Surrogate	MB %Rec	MB Flag			LCS Flag	LCS Resu			mits	Units	Analysis Date	
2-Fluorobiphenyl	76		8	31		75		35	5-107	%	09/13/16 23:39)
2-Fluorophenol	75			79		74		32	2-106	%	09/13/16 23:39)
Nitrobenzene-d5	79		8	34		79		34	I-123	%	09/13/16 23:39)
Phenol-d6	77		8	31		76		36	6-111	%	09/13/16 23:39)
Terphenyl-D14	93		9	90		71		43	3-143	%	09/13/16 23:39)
2,4,6-Tribromophenol	75		9	90		84		26	6-122	%	09/13/16 23:39)

QC Summary 16090921

Icor Ltd. Robinson Terminal North

 Analytical Method: SW-846 8270 C
 Prep Method: SW3510C

 Seq Number:
 135843
 Matrix: Water
 Date Prep: 09/14/16

 MB Sample Id:
 62548-1-BLK
 LCS Sample Id: 62548-1-BKS
 LCSD Sample Id: 62548-1-BSD

MB Sample Id: 625	IB Sample Id: 62548-1-BLK LCS Sample Id: 62548-1-BKS LCSD Sample Id: 62548-1-BSD											
Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Acenaphthene	<5.000	40.00	33.83	85	34.02	85	67-110	1	20	ug/L	09/14/16 21:41	1
Acenaphthylene	<5.000	40.00	35.27	88	35.51	89	69-106	1	20	ug/L	09/14/16 21:41	1
Acetophenone	<5.000	40.00	33.14	83	33.12	83	67-107	0	20	ug/L	09/14/16 21:41	1
Anthracene	<5.000	40.00	30.28	76	29.36	73	79-108	3	20	ug/L	09/14/16 21:41	1 L
Atrazine	<5.000	40.00	31.15	78	32.10	80	17-98	3	20	ug/L	09/14/16 21:41	1
Benzo(a)anthracene	<5.000	40.00	33.87	85	34.72	87	76-109	2	20	ug/L	09/14/16 21:41	1
Benzo(a)pyrene	<5.000	40.00	34.57	86	35.10	88	76-114	2	20	ug/L	09/14/16 21:41	1
Benzo(b)fluoranthene	<5.000	40.00	35.99	90	36.77	92	67-121	2	20	ug/L	09/14/16 21:41	1
Benzo(g,h,i)perylene	<5.000	40.00	34.34	86	35.32	88	75-107	3	20	ug/L	09/14/16 21:41	1
Benzo(k)fluoranthene	<5.000	40.00	34.90	87	34.32	86	62-132	2	20	ug/L	09/14/16 21:41	1
Biphenyl (Diphenyl)	<5.000	40.00	33.71	84	33.95	85	71-108	1	20	ug/L	09/14/16 21:41	1
Butyl benzyl phthalate	<5.000	40.00	37.25	93	37.68	94	74-117	1	20	ug/L	09/14/16 21:41	1
bis(2-chloroethoxy) methar	ne <5.000	40.00	32.09	80	31.83	80	69-111	1	20	ug/L	09/14/16 21:41	1
bis(2-chloroethyl) ether	<5.000	40.00	31.82	80	31.00	78	62-103	3	20	ug/L	09/14/16 21:41	1
bis(2-chloroisopropyl) ethe	r <5.000	40.00	30.67	77	30.20	76	50-103	2	20	ug/L	09/14/16 21:41	1
bis(2-ethylhexyl) phthalate	<5.000	40.00	38.07	95	38.80	97	78-114	2	20	ug/L	09/14/16 21:41	1
4-Bromophenylphenyl ethe	er <5.000	40.00	32.52	81	32.03	80	82-108	2	20	ug/L	09/14/16 21:41	1 L
Di-n-butyl phthalate	<5.000	40.00	36.81	92	36.38	91	71-115	1	20	ug/L	09/14/16 21:41	1
Carbazole	<5.000	40.00	36.56	91	36.40	91	52-134	0	20	ug/L	09/14/16 21:41	1
Caprolactam	<5.000	40.00	35.24	88	35.68	89	50-125	1	20	ug/L	09/14/16 21:41	1
4-Chloro-3-methyl phenol	<5.000	40.00	35.99	90	36.36	91	72-121	1	20	ug/L	09/14/16 21:41	1
4-Chloroaniline	<5.000	40.00	31.45	79	32.39	81	54-103	3	20	ug/L	09/14/16 21:41	1
2-Chloronaphthalene	<5.000	40.00	33.08	83	32.99	82	66-105	0	20	ug/L	09/14/16 21:41	
2-Chlorophenol	<5.000	40.00	33.14	83	32.45	81	63-109	2	20	ug/L	09/14/16 21:41	
4-Chlorophenyl Phenyl eth	er <5.000	40.00	32.78	82	33.43	84	73-100	2	20	ug/L	09/14/16 21:41	1
Chrysene	<5.000	40.00	33.98	85	35.48	89	78-111	4	20	ug/L	09/14/16 21:41	1
Dibenz(a,h)Anthracene	<5.000	40.00	35.66	89	36.09	90	76-106	1	20	ug/L	09/14/16 21:41	1
Dibenzofuran	<5.000	40.00	33.04	83	34.26	86	70-111	4	20	ug/L	09/14/16 21:41	1
3,3-Dichlorobenzidine	<5.000	40.00	44.36	111	45.09	113	79-132	2	20	ug/L	09/14/16 21:41	1
2,4-Dichlorophenol	<5.000	40.00	34.99	87	35.27	88	65-118	1	20	ug/L	09/14/16 21:41	1
Diethyl phthalate	<5.000	40.00	37.39	93	38.21	96	60-114	2	20	ug/L	09/14/16 21:41	
Dimethyl phthalate	<5.000	40.00	37.16	93	37.82	95	66-107	2	20	ug/L	09/14/16 21:41	
2,4-Dimethylphenol	<5.000	40.00	32.57	81	32.15	80	60-119	1	20	ug/L	09/14/16 21:41	
4,6-Dinitro-2-methyl pheno	I <5.000	40.00	38.66	97	39.02	98	60-130	1	20	ug/L	09/14/16 21:41	
2,4-Dinitrophenol	<10.00	40.00	29.40	74	30.27	76	36-136	3	20	ug/L	09/14/16 21:41	
2,4-Dinitrotoluene	<5.000	40.00	34.93	87	35.45	89	70-119	1	20	ug/L	09/14/16 21:41	
2,6-Dinitrotoluene	<5.000	40.00	37.77	94	38.90	97	68-117	3	20	ug/L	09/14/16 21:41	1
Fluoranthene	<5.000	40.00	34.97	87	35.08	88	79-112	0	20	ug/L	09/14/16 21:41	1
Fluorene	<5.000	40.00	35.21	88	36.23	91	71-109	3	20	ug/L	09/14/16 21:41	
Hexachlorobenzene	<5.000	40.00	32.39	81	31.39	78	76-110	3	20	ug/L	09/14/16 21:41	
Hexachlorobutadiene	<5.000	40.00	31.79	79	31.47	79	64-113	1	20	ug/L	09/14/16 21:41	
Hexachlorocyclopentadien		40.00	35.34	88	34.82	87	49-124	1	20	ug/L	09/14/16 21:41	
Hexachloroethane	<5.000	40.00	32.33	81	31.36	78	62-105	3	20	ug/L	09/14/16 21:41	
Indeno(1,2,3-c,d)Pyrene	<5.000	40.00	35.10	88	35.67	89	69-120	2	20	ug/L	09/14/16 21:41	
Isophorone	<5.000	40.00	34.61	87	35.81	90	68-108	3	20	ug/L	09/14/16 21:41	
2-Methylnaphthalene	<5.000	40.00	34.18	85	34.18	85	64-117	0	20	ug/L	09/14/16 21:4	
2-Methyl phenol	<5.000	40.00	34.06	85	33.93	85	67-111	0	20	ug/L	09/14/16 21:4	
3&4-Methylphenol	<5.000	40.00	33.96	85	34.53	86	67-107	2	20	ug/L	09/14/16 21:4	
Naphthalene	<5.000	40.00	32.08	80	31.97	80	65-103	0	20	ug/L	09/14/16 21:4	
2-Nitroaniline	<5.000	40.00	32.99	82	33.46	84	59-114	1	20	ug/L	09/14/16 21:4	
3-Nitroaniline	<5.000	40.00	32.78	82	34.06	85		4	20	ug/L	09/14/16 21:41	
= • •	0.000	.0.00	525		3 1.00		22 .00	•		9' - -	35 IO 2 III I	

										_		105100	
Analytical Metho		8270 C								ep Meth		/3510C	
Seq Number:	135843					Water				Date Pro	•	14/16	
MB Sample Id:	62548-1-	BLK		LCS San	nple ld:	62548-1-	BKS		LCSE	Sample	e ld: 625	548-1-BSD	
Parameter		MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Fla
4-Nitroaniline		<5.000	40.00	33.19	83	35.35	88	51-125	6	20	ug/L	09/14/16 21:4	1
Nitrobenzene		<5.000	40.00	30.01	75	29.52	74	60-107	2	20	ug/L	09/14/16 21:4	1
2-Nitrophenol		<5.000	40.00	34.31	86	34.68	87	65-119	1	20	ug/L	09/14/16 21:4	1
4-Nitrophenol		<5.000	40.00	41.77	104	39.11	98	46-121	7	20	ug/L	09/14/16 21:4	1
N-Nitrosodi-n-propyl	amine	<5.000	40.00	34.60	87	34.54	86	60-98	0	20	ug/L	09/14/16 21:4	1
N-Nitrosodiphenylan	nine	<5.000	40.00	35.26	88	35.34	88	68-106	0	20	ug/L	09/14/16 21:4	1
Di-n-octyl phthalate		<5.000	40.00	38.14	95	36.80	92	69-120	4	20	ug/L	09/14/16 21:4	
Pentachlorophenol		<5.000	40.00	38.26	96	38.15	95	63-119	0	20	ug/L	09/14/16 21:4	1
Phenanthrene		<5.000	40.00	37.53	94	39.28	98	73-109	5	20	ug/L	09/14/16 21:4	
Phenol		<5.000	40.00	32.91	82	32.52	81	65-110	1	20	ug/L	09/14/16 21:4	
Pyrene		<5.000	40.00	34.60	87	36.72	92	78-111	6	20	ug/L	09/14/16 21:4	
Pyridine		<5.000	40.00	27.95	70	27.24	68	47-105	3	20	ug/L	09/14/16 21:4	
2,4,5-Trichloropheno		<5.000	40.00	33.74	84	33.49	84	69-114	1	20	ug/L	09/14/16 21:4	
2,4,6-Trichloropheno	ol	<5.000	40.00	38.41	96	39.90	100	68-118	4	20	ug/L	09/14/16 21:4	1
Surrogate		MB %Rec	MB Flag		.CS esult	LCS Flag	LCS Resu			mits	Units	Analysis Date	
2-Fluorobiphenyl		93		;	80		83		35	5-107	%	09/14/16 21:4	1
2-Fluorophenol		98			80		80			2-106	%	09/14/16 21:4	
Nitrobenzene-d5		99			85		85		34	I-123	%	09/14/16 21:4	1
Phenol-d6		94			82		83		36	S-111	%	09/14/16 21:4	1
Terphenyl-D14		99		9	92		98		43	3-143	%	09/14/16 21:4	1
2,4,6-Tribromopheno	ol	90		!	90		94		26	6-122	%	09/14/16 21:4	1
Analytical Metho	d: SW-846	8015C							Pre	ep Meth	od: SW	/5030	
Seq Number:	135716				Matrix:	Solid				Date Pro	ep: 09/	12/16	
MB Sample Id:	62513-2-	BLK		LCS San	nple ld:	62513-2-	BKS						
Parameter		MB Result	Spike Amount	LCS Result	LCS %Rec			Limits			Units	Analysis Date	Fla
TPH-GRO (Gasoline R	ange Organic:	<100	5000	4627	93			75-123			ug/kg	09/12/16 23:58	3
Surrogate		MB %Rec	MB Flag		.CS sult	LCS Flag			Li	mits	Units	Analysis Date	
a,a,a-Trifluorotoluen	е	91		1	10				50)-122	%	09/12/16 23:5	8
Analytical Metho	d: SW-846	8015C							Pre	ep Meth	od: SW	/5030	

Analytical Method	. 3VV-040 d	0150				Prep Method: 30000					
Seq Number:	135740				Matrix:	Solid		Date Pr	rep: 09/	13/16	
MB Sample Id:	62526-2-E	BLK		LCS San	nple ld:	62526-2-BKS					
Parameter		MB Result	Spike Amount	LCS Result	LCS %Rec		Limits		Units	Analysis Date	Flag
TPH-GRO (Gasoline Rar	nge Organic:	<100	5000	4811	96		75-123		ug/kg	09/13/16 10:36	3
Surrogate		MB %Rec	MB Flag	· -	.CS esult	LCS Flag		Limits	Units	Analysis Date	
a,a,a-Trifluorotoluene		88		1	09			50-122	%	09/13/16 10:3	6

QC Summary 16090921

Icor Ltd. Robinson Terminal North

Analytical Method: SW-846 8015CPrep Method: SW5030BSeq Number:135835Matrix: WaterDate Prep: 09/15/16

MB Sample Id: 62576-2-BLK LCS Sample Id: 62576-2-BKS

LCS LCS MB **Spike** Limits Units **Analysis Parameter** Flag Result Date Result **Amount** %Rec TPH-GRO (Gasoline Range Organic: <100 5000 4707 94 74-132 ug/L 09/15/16 11:37 MB MB LCS **LCS** Limits Units **Analysis** Surrogate Result Flag Date %Rec Flag a,a,a-Trifluorotoluene 71 81 55-114 % 09/15/16 11:37

Analytical Method: SW-846 8015CPrep Method:SW5030Seq Number:135716Matrix: SoilDate Prep:09/12/16

Parent Sample Id: 16090921-009 MS Sample Id: 16090921-009 S MSD Sample Id: 16090921-009 SD

Parent Spike MS MS Limits %RPD **RPD** Units Analysis MSD MSD **Parameter** Flag Result Amount Result %Rec Result %Rec Limit Date TPH-GRO (Gasoline Range Organic: <123.5 6173 8015 321.3 185 30 09/13/16 07:04 XF 130 5 31-140 ug/kg

MS MS MSD Limits MSD Units **Analysis** Surrogate Flag Date Result Flag Result 09/13/16 07:04 3 116 % a,a,a-Trifluorotoluene 50-122

Icor Ltd. Robinson Terminal North

Prep Method: SW5030B Analytical Method: SW-846 8260 B Seq Number: 135763 Matrix: Water Date Prep: 09/14/16

MB Sample Id:	62545-1-BLK		LCS Sar	nple ld:	62545-1-BKS	·		
Parameter	Mi Resu	•	LCS Result	LCS %Rec	Limits	Units	Analysis Date	Flag
Acetone	<10.0	0 50.00	51.27	103	29-149	ug/L	09/14/16 09:07	
Benzene	<1.00	0 50.00	63.05	126	85-123	ug/L	09/14/16 09:07	Н
Bromochloromethan	e <1.00	0 50.00	56.12	112	82-136	ug/L	09/14/16 09:07	
Bromodichlorometha	ne <1.00	0 50.00	64.12	128	88-133	ug/L	09/14/16 09:07	
Bromoform	<5.00	0 50.00	54.24	108	80-126	ug/L	09/14/16 09:07	
Bromomethane	<1.00	0 50.00	58.03	116	64-139	ug/L	09/14/16 09:07	
2-Butanone (MEK)	<10.0	0 50.00	42.04	84	39-135	ug/L	09/14/16 09:07	
Carbon Disulfide	<10.0	0 50.00	67.59	135	85-124	ug/L	09/14/16 09:07	Н
Carbon Tetrachloride	e <1.00	0 50.00	57.77	116	81-138	ug/L	09/14/16 09:07	
Chlorobenzene	<1.00	0 50.00	59.16	118	85-120	ug/L	09/14/16 09:07	
Chloroethane	<1.00	0 50.00	65.77	132	75-129	ug/L	09/14/16 09:07	Н
Chloroform	<1.00	0 50.00	56.06	112	85-128	ug/L	09/14/16 09:07	
Chloromethane	<1.00	0 50.00	60.98	122	60-139	ug/L	09/14/16 09:07	
Cyclohexane	<10.0	0 50.00	63.03	126	55-131	ug/L	09/14/16 09:07	
1,2-Dibromo-3-Chlor	opropane <10.0	0 50.00	53.82	108	69-127	ug/L	09/14/16 09:07	
Dibromochlorometha	ne <1.00	0 50.00	55.83	112	82-127	ug/L	09/14/16 09:07	
1,2-Dibromoethane (EDB) <1.00	0 50.00	60.83	122	82-121	ug/L	09/14/16 09:07	
1,2-Dichlorobenzene	<1.00	0 50.00	60.30	121	82-123	ug/L	09/14/16 09:07	
1,3-Dichlorobenzene	<1.00	0 50.00	58.52	117	81-123	ug/L	09/14/16 09:07	
1,4-Dichlorobenzene			58.07	116	81-121	ug/L	09/14/16 09:07	
Dichlorodifluorometh			67.78	136	69-147	ug/L	09/14/16 09:07	
1,1-Dichloroethane	<1.00		59.81	120	83-123	ug/L	09/14/16 09:07	
1,2-Dichloroethane	<1.00		63.27	127	86-138	ug/L	09/14/16 09:07	
1,1-Dichloroethene	<1.00		67.95	136	85-127	ug/L	09/14/16 09:07	
cis-1,2-Dichloroether			62.95	126	87-127	ug/L	09/14/16 09:07	
1,2-Dichloropropane	<1.00		62.55	125	79-125	ug/L	09/14/16 09:07	
cis-1,3-Dichloroprope			56.45	113	79-131	ug/L	09/14/16 09:07	
trans-1,3-Dichloropro			55.82	112	82-133	ug/L	09/14/16 09:07	
trans-1,2-Dichloroeth			56.20	112	85-125	ug/L	09/14/16 09:07	
Ethylbenzene	<1.00		61.86	124	83-123	ug/L	09/14/16 09:07	
2-Hexanone	<10.0		48.46	97	37-137	ug/L	09/14/16 09:07	
Isopropylbenzene	<1.00	0 50.00	55.16	110	70-131	ug/L	09/14/16 09:07	
Methyl Acetate	<10.0	0 50.00	63.15	126	69-127	ug/L	09/14/16 09:07	
Methylcyclohexane	<10.0	0 50.00	61.91	124	75-129	ug/L	09/14/16 09:07	
Methylene Chloride	<1.00	0 50.00	66.13	132	86-124	ug/L	09/14/16 09:07	Н
4-Methyl-2-Pentanor	ne <5.00	0 50.00	47.14	94	39-143	ug/L	09/14/16 09:07	
Methyl-t-butyl ether	<1.00	0 50.00	44.18	88	75-134	ug/L	09/14/16 09:07	
Naphthalene	<1.00		52.83	106	61-118	ug/L	09/14/16 09:07	
Styrene	<1.00	0 50.00	53.99	108	80-120	ug/L	09/14/16 09:07	
1,1,2,2-Tetrachloroet			61.47	123	64-125	ug/L	09/14/16 09:07	
Tetrachloroethene	<1.00		61.96	124	83-138	ug/L	09/14/16 09:07	
Toluene	<1.00		62.41	125	88-126	ug/L	09/14/16 09:07	
1,2,3-Trichlorobenze			52.11	104	75-124	ug/L	09/14/16 09:07	
1,2,4-Trichlorobenze			58.82	118	77-131	ug/L	09/14/16 09:07	
1,1,1-Trichloroethane			62.34	125	68-146	ug/L	09/14/16 09:07	
1,1,2-Trichloroethane			64.10	128	85-124	ug/L	09/14/16 09:07	
Trichloroethene	<1.00		62.32	125	87-127	ug/L	09/14/16 09:07	
Trichlorofluorometha			68.78	138	77-147	ug/L	09/14/16 09:07	
1,1,2-Trichloro-1,2,2-Tri			70.58	141	68-135	ug/L	09/14/16 09:07	
Vinyl Chloride	<1.00		64.94	130	74-138	ug/L	09/14/16 09:07	
m,p-Xylenes	<2.00		106.3	106	84-124	ug/L	09/14/16 09:07	
117	2.00	. 30	,			~.g. =	2	

QC Summary 16090921

Icor Ltd. Robinson Terminal North

Analytical Method: SW-846 8260 BPrep Method: SW5030BSeq Number:135763Matrix: WaterDate Prep: 09/14/16

MB Sample Id: 62545-1-BLK LCS Sample Id: 62545-1-BKS

MB Sample Id.	02343-1-BLK		LOO Gan	ipic ia.	02040-1-DIXO					
Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec		Limits		Units	Analysis Date	Flag
o-Xylene	<1.000	50.00	54.60	109	ı	79-126		ug/L	09/14/16 09:07	
Surrogate	MB %Red	MB Flag	· ·	CS sult	LCS Flag		Limits	Units	Analysis Date	
4-Bromofluorobenzen	e 101		9	99			86-111	%	09/14/16 09:07	,
Dibromofluoromethan	e 98		1	04			91-119	%	09/14/16 09:07	,
Toluene-D8	103		1	03			90-117	%	09/14/16 09:07	,

Icor Ltd. Robinson Terminal North

Prep Method: SW5030 Analytical Method: SW-846 8260 B Seq Number: 135847 Matrix: Solid Date Prep: 09/15/16

MB Sample Id: 62583-1-BLK LCS Sample Id: 62583-1-BKS

MB Sample Id: 62583-1	-BLK		LCS San	nple ld:	62583-1-BKS			
Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Analysis Date	Flag
Acetone	<20.00	60.00	74.88	125	46-127	ug/kg	09/15/16 12:58	
Benzene	<5.000	60.00	68.60	114	70-127	ug/kg	09/15/16 12:58	
Bromochloromethane	<5.000	60.00	61.39	102	68-122	ug/kg	09/15/16 12:58	
Bromodichloromethane	<5.000	60.00	60.43	101	68-122	ug/kg	09/15/16 12:58	
Bromoform	<5.000	60.00	58.33	97	57-127	ug/kg	09/15/16 12:58	
Bromomethane	<5.000	60.00	67.46	112	68-123	ug/kg	09/15/16 12:58	
2-Butanone (MEK)	<20.00	60.00	71.97	120	41-136	ug/kg	09/15/16 12:58	
Carbon Disulfide	<10.00	60.00	71.72	120	66-135	ug/kg	09/15/16 12:58	
Carbon Tetrachloride	<5.000	60.00	52.99	88	64-147	ug/kg	09/15/16 12:58	
Chlorobenzene	<5.000	60.00	66.33	111	70-121	ug/kg	09/15/16 12:58	
Chloroethane	<5.000	60.00	71.33	119	66-142	ug/kg	09/15/16 12:58	
Chloroform	<5.000	60.00	60.49	101	68-123	ug/kg	09/15/16 12:58	
Chloromethane	<5.000	60.00	79.54	133	65-136	ug/kg	09/15/16 12:58	
Cyclohexane	<20.00	60.00	70.16	117	62-138	ug/kg	09/15/16 12:58	
1,2-Dibromo-3-Chloropropane	<40.00	60.00	58.56	98	55-122	ug/kg	09/15/16 12:58	
Dibromochloromethane	<5.000	60.00	57.68	96	61-122	ug/kg	09/15/16 12:58	
1,2-Dibromoethane (EDB)	<5.000	60.00	62.36	104	63-119	ug/kg	09/15/16 12:58	
1,2-Dichlorobenzene	<5.000	60.00	62.54	104	65-121	ug/kg	09/15/16 12:58	
1,3-Dichlorobenzene	<5.000	60.00	64.50	108	69-121	ug/kg	09/15/16 12:58	
1,4-Dichlorobenzene	<5.000	60.00	63.97	107	69-118	ug/kg	09/15/16 12:58	
Dichlorodifluoromethane	<5.000	60.00	57.47	96	53-162	ug/kg	09/15/16 12:58	
1,1-Dichloroethane	<5.000	60.00	65.68	109	70-127	ug/kg	09/15/16 12:58	
1,2-Dichloroethane	<5.000	60.00	56.17	94	68-118	ug/kg	09/15/16 12:58	
1,1-Dichloroethene	<5.000	60.00	68.72	115	69-133	ug/kg	09/15/16 12:58	
1,2-Dichloropropane	<5.000	60.00	71.66	119	70-122	ug/kg	09/15/16 12:58	
cis-1,2-Dichloroethene	<5.000	60.00	66.37	111	68-126	ug/kg	09/15/16 12:58	
cis-1,3-Dichloropropene	<5.000	60.00	63.86	106	68-121	ug/kg	09/15/16 12:58	
trans-1,2-Dichloroethene	<5.000	60.00	68.07	113	70-132	ug/kg	09/15/16 12:58	
trans-1,3-Dichloropropene	<5.000	60.00	60.25	100	67-115	ug/kg	09/15/16 12:58	
Ethylbenzene	<5.000	60.00	67.89	113	70-125	ug/kg	09/15/16 12:58	
2-Hexanone	<20.00	60.00	73.00	122	40-121	ug/kg	09/15/16 12:58	
Isopropylbenzene	<5.000	60.00	67.13	112	68-130	ug/kg	09/15/16 12:58	
Methyl Acetate	<20.00	60.00	68.18	114	60-125	ug/kg	09/15/16 12:58	
Methylcyclohexane	<20.00	60.00	68.01	113	62-150	ug/kg	09/15/16 12:58	
Methylene Chloride	<5.000	60.00	67.92	113	67-121	ug/kg	09/15/16 12:58	
4-Methyl-2-Pentanone	<20.00	60.00	67.75	113	48-117	ug/kg	09/15/16 12:58	
Methyl-t-butyl ether	<5.000	60.00	55.14	92	66-119	ug/kg	09/15/16 12:58	
Naphthalene	<5.000	60.00	59.31	99	54-115	ug/kg	09/15/16 12:58	
Styrene	<5.000	60.00	63.86	106	71-120	ug/kg	09/15/16 12:58	
1,1,2,2-Tetrachloroethane	<5.000	60.00	71.81	120	59-122	ug/kg	09/15/16 12:58	
Tetrachloroethene	<5.000	60.00	60.13	100	65-145	ug/kg	09/15/16 12:58	
Toluene	<5.000	60.00	66.19	110	69-129	ug/kg	09/15/16 12:58	
1,2,3-Trichlorobenzene	<5.000	60.00	56.07	93	60-114	ug/kg	09/15/16 12:58	
1,2,4-Trichlorobenzene	<5.000	60.00	55.83	93	64-115	ug/kg	09/15/16 12:58	
1,1,1-Trichloroethane	<5.000	60.00	52.93	88	65-139	ug/kg	09/15/16 12:58	
1,1,2-Trichloroethane	<5.000	60.00	70.14	117	64-125	ug/kg	09/15/16 12:58	
Trichloroethene	<5.000	60.00	64.44	107	69-133	ug/kg	09/15/16 12:58	
Trichlorofluoromethane	<5.000	60.00	60.71	101	59-153	ug/kg	09/15/16 12:58	
1,1,2-Trichloro-1,2,2-Trifluoroethane	<5.000	60.00	59.34	99	62-139	ug/kg	09/15/16 12:58	
Vinyl Chloride	<5.000	60.00	85.29	142	69-142	ug/kg	09/15/16 12:58	
m,p-Xylenes	<10.00	120	136	113	71-124	ug/kg	09/15/16 12:58	

Icor Ltd. Robinson Terminal North

Anai	ytıcal Method:	SW-846 8260 B			Prep Method:	5005030
Seq	Number:	135847	Matrix:	Solid	Date Prep:	09/15/16

LCS Sample Id: 62583-1-BKS MB Sample Id: 62583-1-BLK

			•						
Parameter	MB Result	Spike Amount	LCS LCS Result %Re		Limits		Units	Analysis Fla Date	аg
o-Xylene	<5.000	60.00	64.71 10)8	72-123		ug/kg	09/15/16 12:58	
Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag		Limits	Units	Analysis Date	
4-Bromofluorobenzene	116		101			82-126	%	09/15/16 12:58	
Dibromofluoromethane	97		97			92-113	%	09/15/16 12:58	
Toluene-D8	96		102			94-105	%	09/15/16 12:58	

Icor Ltd. Robinson Terminal North

Analytical Method: SW-846 8260 B Prep Method: SW5030 Seq Number: 135849 Matrix: Solid Date Prep: 09/15/16

LCS Sample Id: 62584-1-BKS MB Sample Id: 62584-1-BLK

MB Sample ld: 62584-1-	-BLK		LCS San	npie ia:	62584-1-BKS			
Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Analysis Date	Flag
Acetone	<20.00	60.00	81.84	136	46-127	ug/kg	09/16/16 02:15	Н
Benzene	<5.000	60.00	58.70	98	70-127	ug/kg	09/16/16 02:15	;
Bromochloromethane	<5.000	60.00	52.06	87	68-122	ug/kg	09/16/16 02:15	;
Bromodichloromethane	<5.000	60.00	50.95	85	68-122	ug/kg	ıg/kg 09/16/16 02:15	
Bromoform	<5.000	60.00	51.61	86	57-127	ug/kg	09/16/16 02:15	;
Bromomethane	<5.000	60.00	52.78	88	68-123	ug/kg	09/16/16 02:15	;
2-Butanone (MEK)	<20.00	60.00	79.35	132	41-136	ug/kg	09/16/16 02:15	;
Carbon Disulfide	<10.00	60.00	52.59	88	66-135	ug/kg	09/16/16 02:15	;
Carbon Tetrachloride	<5.000	60.00	39.28	65	64-147	ug/kg	09/16/16 02:15	;
Chlorobenzene	<5.000	60.00	58.32	97	70-121	ug/kg	09/16/16 02:15	;
Chloroethane	<5.000	60.00	55.75	93	66-142	ug/kg	09/16/16 02:15	;
Chloroform	<5.000	60.00	50.13	84	68-123	ug/kg	09/16/16 02:15	,
Chloromethane	<5.000	60.00	50.98	85	65-136	ug/kg	09/16/16 02:15	;
Cyclohexane	<20.00	60.00	55.21	92	62-138	ug/kg	09/16/16 02:15	;
1,2-Dibromo-3-Chloropropane	<40.00	60.00	53.83	90	55-122	ug/kg	09/16/16 02:15	;
Dibromochloromethane	<5.000	60.00	52.56	88	61-122	ug/kg	09/16/16 02:15	;
1,2-Dibromoethane (EDB)	<5.000	60.00	57.09	95	63-119	ug/kg	09/16/16 02:15	;
1,2-Dichlorobenzene	<5.000	60.00	56.41	94	65-121	ug/kg	09/16/16 02:15	;
1,3-Dichlorobenzene	<5.000	60.00	55.88	93	69-121	ug/kg	09/16/16 02:15	;
1,4-Dichlorobenzene	<5.000	60.00	54.89	91	69-118	ug/kg	09/16/16 02:15	,
Dichlorodifluoromethane	<5.000	60.00	41.41	69	53-162	ug/kg	09/16/16 02:15	;
1,1-Dichloroethane	<5.000	60.00	55.36	92	70-127	ug/kg	09/16/16 02:15	;
1,2-Dichloroethane	<5.000	60.00	48.12	80	68-118	ug/kg	09/16/16 02:15	;
1,1-Dichloroethene	<5.000	60.00	53.39	89	69-133	ug/kg	09/16/16 02:15	
1,2-Dichloropropane	<5.000	60.00	60.16	100	70-122	ug/kg	09/16/16 02:15	;
cis-1,2-Dichloroethene	<5.000	60.00	54.50	91	68-126	ug/kg	09/16/16 02:15	;
cis-1,3-Dichloropropene	<5.000	60.00	55.04	92	68-121	ug/kg	09/16/16 02:15	;
trans-1,2-Dichloroethene	<5.000	60.00	54.33	91	70-132	ug/kg	09/16/16 02:15	
trans-1,3-Dichloropropene	<5.000	60.00	52.04	87	67-115	ug/kg	09/16/16 02:15	;
Ethylbenzene	<5.000	60.00	58.93	98	70-125	ug/kg	09/16/16 02:15	
2-Hexanone	<20.00	60.00	72.99	122	40-121	ug/kg	09/16/16 02:15	Н
Isopropylbenzene	<5.000	60.00	55.38	92	68-130	ug/kg	09/16/16 02:15	;
Methyl Acetate	<20.00	60.00	70.50	118	60-125	ug/kg	09/16/16 02:15	
Methylcyclohexane	<20.00	60.00	53.01	88	62-150	ug/kg	09/16/16 02:15	
Methylene Chloride	<5.000	60.00	59.69	99	67-121	ug/kg	09/16/16 02:15	
4-Methyl-2-Pentanone	<20.00	60.00	67.77	113	48-117	ug/kg	09/16/16 02:15	,
Methyl-t-butyl ether	<5.000	60.00	63.12	105	66-119	ug/kg	09/16/16 02:15	
Naphthalene	<5.000	60.00	59.28	99	54-115	ug/kg	09/16/16 02:15	;
Styrene	<5.000	60.00	58.30	97	71-120	ug/kg	09/16/16 02:15	
1,1,2,2-Tetrachloroethane	<5.000	60.00	58.75	98	59-122	ug/kg	09/16/16 02:15	
Tetrachloroethene	<5.000	60.00	46.23	77	65-145	ug/kg	09/16/16 02:15	;
Toluene	<5.000	60.00	56.25	94	69-129	ug/kg	09/16/16 02:15	;
1,2,3-Trichlorobenzene	<5.000	60.00	49.35	82	60-114	ug/kg	09/16/16 02:15	
1,2,4-Trichlorobenzene	<5.000	60.00	46.97	78	64-115	ug/kg	09/16/16 02:15	
1,1,1-Trichloroethane	<5.000	60.00	41.16	69	65-139	ug/kg	09/16/16 02:15	
1,1,2-Trichloroethane	<5.000	60.00	58.70	98	64-125	ug/kg	09/16/16 02:15	
Trichloroethene	<5.000	60.00	51.75	86	69-133	ug/kg	09/16/16 02:15	
Trichlorofluoromethane	<5.000	60.00	39.59	66	59-153	ug/kg	09/16/16 02:15	
1,1,2-Trichloro-1,2,2-Trifluoroethane	<5.000	60.00	44.26	74	62-139	ug/kg	09/16/16 02:15	
Vinyl Chloride	<5.000	60.00	54.73	91	69-142	ug/kg	09/16/16 02:15	
m,p-Xylenes	<10.00	120	136.6	114	71-124	ug/kg	09/16/16 02:15	
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QC Summary 16090921

Icor Ltd. Robinson Terminal North

Analytical Method: SW-846 8260 BPrep Method:SW5030Seq Number:135849Matrix:SolidDate Prep:09/15/16

99

MB Sample Id: 62584-1-BLK LCS Sample Id: 62584-1-BKS

97

Toluene-D8

mb campio ia.	OZOO! ! BZ!									
Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec		Limits		Units	Analysis Date	Flag
o-Xylene	<5.000	60.00	62.23	104		72-123		ug/kg	09/16/16 02:15	
Surrogate	MB %Red	MB Flag	LC Res	-	LCS Flag		Limits	Units	Analysis Date	
4-Bromofluorobenzen	e 106		97	7			82-126	%	09/16/16 02:15	5
Dibromofluoromethan	e 88	*	88	8	*		92-113	%	09/16/16 02:15	5

09/16/16 02:15

94-105

QC Summary 16090921

Icor Ltd. Robinson Terminal North

Analytical Method: SW-846 8260 BPrep Method: SW5030BSeq Number:135763Matrix: Ground WaterDate Prep: 09/14/16

Parent Sample Id: 16090921-005 MS Sample Id: 16090921-005 S MSD Sample Id: 16090921-005 SD

Parent Sample Id: 16090921-005			MS Sample Id: 16090921-005 S			MSD Sample Id: 16090921-005 SD						
Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Acetone	<10.00	50.00	65.02	130	60.50	121	46-138	7	25	ug/L	09/14/16 02:52	2
Benzene	<1.000	50.00	53.39	107	53.26	107	77-126	0	25	ug/L	09/14/16 02:52	2
Bromochloromethane	<1.000	50.00	46.83	94	47.24	94	74-133	1	25	ug/L	09/14/16 02:52	2
Bromodichloromethane	<1.000	50.00	54.68	109	55.25	111	79-130	1	25	ug/L	09/14/16 02:52	2
Bromoform	<5.000	50.00	43.73	87	42.54	85	69-120	3	25	ug/L	09/14/16 02:52	2
Bromomethane	<1.000	50.00	46.29	93	47.45	95	64-130	2	25	ug/L	09/14/16 02:52	2
2-Butanone (MEK)	<10.00	50.00	48.86	98	48.47	97	34-126	1	25	ug/L	09/14/16 02:52	2
Carbon Disulfide	<10.00	50.00	58.30	117	50.26	101	76-126	15	25	ug/L	09/14/16 02:52	2
Carbon Tetrachloride	<1.000	50.00	49.22	98	49.37	99	77-137	0	25	ug/L	09/14/16 02:52	2
Chlorobenzene	<1.000	50.00	51.02	102	50.40	101	74-120	1	25	ug/L	09/14/16 02:52	2
Chloroethane	<1.000	50.00	55.16	110	54.49	109	68-133	1	25	ug/L	09/14/16 02:52	2
Chloroform	<1.000	50.00	47.87	96	47.63	95	77-127	1	25	ug/L	09/14/16 02:52	2
Chloromethane	<1.000	50.00	51.64	103	51.34	103	50-143	1	25	ug/L	09/14/16 02:52	2
Cyclohexane	<10.00	50.00	54.97	110	54.67	109	53-139	1	25	ug/L	09/14/16 02:52	2
1,2-Dibromo-3-Chloropropane	<10.00	50.00	45.86	92	47.24	94	56-123	3	25	ug/L	09/14/16 02:52	2
Dibromochloromethane	<1.000	50.00	46.66	93	46.37	93	70-125	1	25	ug/L	09/14/16 02:52	2
1,2-Dibromoethane (EDB)	<1.000	50.00	52.96	106	52.59	105	69-121	1	25	ug/L	09/14/16 02:52	2
1,2-Dichlorobenzene	<1.000	50.00	51.88	104	52.22	104	69-118	1	25	ug/L	09/14/16 02:52	2
1,3-Dichlorobenzene	<1.000	50.00	51.49	103	51.44	103	68-119	0	25	ug/L	09/14/16 02:52	2
1,4-Dichlorobenzene	<1.000	50.00	50.01	100	49.85	100	67-117	0	25	ug/L	09/14/16 02:52	2
Dichlorodifluoromethane	<1.000	50.00	57.93	116	58.24	116	68-139	1	25	ug/L	09/14/16 02:52	2
1,1-Dichloroethane	<1.000	50.00	54.96	110	52.36	105	78-126	5	25	ug/L	09/14/16 02:52	2
1,2-Dichloroethane	<1.000	50.00	52.48	105	52.78	106	78-134	1	25	ug/L	09/14/16 02:52	
1,1-Dichloroethene	<1.000	50.00	59.38	119	50.47	101	78-125	16	25	ug/L	09/14/16 02:52	2
cis-1,2-Dichloroethene	<1.000	50.00	53.16	106	54.19	108	78-128	2	25	ug/L	09/14/16 02:52	2
1,2-Dichloropropane	<1.000	50.00	53.43	107	53.42	107	73-126	0	25	ug/L	09/14/16 02:52	2
cis-1,3-Dichloropropene	<1.000	50.00	45.88	92	46.77	94	67-126	2	25	ug/L	09/14/16 02:52	
trans-1,3-Dichloropropene	<1.000	50.00	44.35	89	45.26	91	68-129	2	25	ug/L	09/14/16 02:52	2
trans-1,2-Dichloroethene	<1.000	50.00	54.75	110	48.69	97	76-128	12	25	ug/L	09/14/16 02:52	2
Ethylbenzene	<1.000	50.00	53.08	106	53.91	108	74-123	2	25	ug/L	09/14/16 02:52	
2-Hexanone	<10.00	50.00	58.58	117	58.85	118	38-125	0	25	ug/L	09/14/16 02:52	
Isopropylbenzene	<1.000	50.00	47.62	95	46.46	93	58-129	2	25	ug/L	09/14/16 02:52	
Methyl Acetate	<10.00	50.00	42.38	85	37.55	75	63-115	12	25	ug/L	09/14/16 02:52	
Methylcyclohexane	<10.00	50.00	55.44	111	55.15	110	69-130	1	25	ug/L	09/14/16 02:52	2
Methylene Chloride	<1.000	50.00	57.01	114	47.42	95	76-124	18	25	ug/L	09/14/16 02:52	
4-Methyl-2-Pentanone	<5.000	50.00	56.02	112	56.84	114	35-123	1	25	ug/L	09/14/16 02:52	2
Methyl-t-butyl ether	5.930	50.00	49.04	86	44.38	77	64-129	10	25	ug/L	09/14/16 02:52	2
Naphthalene	<1.000	50.00	48.68	97	48.90	98	45-109	0	25	ug/L	09/14/16 02:52	2
Styrene	<1.000	50.00	45.32	91	44.67	89	61-124	1	25	ug/L	09/14/16 02:52	
1,1,2,2-Tetrachloroethane	<1.000	50.00	53.17	106	51.91	104	47-130	2	25	ug/L	09/14/16 02:52	
Tetrachloroethene	<1.000	50.00	53.88	108	54.48	109	68-139	1	25	ug/L	09/14/16 02:52	
Toluene	<1.000	50.00	54.52	109	55.48	111	79-128	2	25	ug/L	09/14/16 02:52	
1,2,3-Trichlorobenzene	<1.000	50.00	48.22	96	48.71	97		1	25	ug/L	09/14/16 02:52	
1,2,4-Trichlorobenzene	<1.000	50.00	53.33	107	53.76	108	54-124	1	25	ug/L	09/14/16 02:52	
1,1,1-Trichloroethane	<1.000	50.00	54.25	109	54.55	109	73-140	1	25	ug/L	09/14/16 02:52	
1,1,2-Trichloroethane	<1.000	50.00	54.64	109	54.90	110	78-124	0	25	ug/L	09/14/16 02:52	
Trichloroethene	<1.000	50.00	54.21	108	54.84	110	77-131	1	25	ug/L	09/14/16 02:52	
Trichlorofluoromethane	<5.000	50.00	58.75	118	53.99	108	73-144	8	25	ug/L	09/14/16 02:52	
1,1,2-Trichloro-1,2,2-Trifluoroethane	<1.000	50.00	60.14	120	51.26	103	65-140	16	25	ug/L	09/14/16 02:52	
Vinyl Chloride	<1.000	50.00	54.22	108	55.56	111	60-146	2	25	ug/L	09/14/16 02:52	
m,p-Xylenes	<2.000	100	90.48	90	90.46		75-125	0	25	ug/L	09/14/16 02:52	
(I 7			- 55		- 55			-		- g. -		

QC Summary 16090921

Icor Ltd. Robinson Terminal North

Analytical Method: SW-846 8260 B Prep Method: SW5030B Seq Number: 135763 Matrix: Ground Water Date Prep: 09/14/16

MS Sample Id: 16090921-005 S MSD Sample Id: 16090921-005 SD Parent Sample Id: 16090921-005

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
o-Xylene	<1.000	50.00	46.06	92	45.10	90	69-126	2	25	ug/L	09/14/16 02:52	2

Surrogate	MS MS Result Flag	MSD MSD Result Flag	Limits	Units	Analysis Date	
4-Bromofluorobenzene	101	98	86-111	%	09/14/16 02:52	
Dibromofluoromethane	101	102	91-119	%	09/14/16 02:52	
Toluene-D8	104	105	90-117	%	09/14/16 02:52	

F = RPD exceeded the laboratory control limits

X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits

L = Recovery of BS,BSD or both below the laboratory control limits



SAMPLE CHAIN OF CUSTODY/AGREEMENT FORM

www.phaseonline.comemail: info@phaseonline.com

PHASE SEPARATION SCIENCE, INC.

7.9% STATE RESULTS REPORTED TO: DE PA VA, WV OTHER A=Air WI=Wipe REMARKS P DW=Drinking Wtr GW=Ground Wtr WW=Waste Wtr 0=Oil S=Soil L=Liquid SOL=Soild }[Ice Present: PUES ≸X Shipping Carrier: PAGE Custody Seal: ă□ of Coolers: X × $\exists \Box$ X DW COMPLIANCE? EDD FORMAT TYPE 2-Day Requested TAT (One TAT per COC) Other OTHER 19097 Emergency COA QC SUMM CLP LIKE Data Deliverables Required: \downarrow 3-Day X Special Instructions Next Day X X 2-Day YES hermod X PSS Work Order #: AMPLE COMP GRAB TYPE SW=Surface Wir 8 O D N шшс *PROJECT MGR: WILLY ZECT *PHONE NO. (70 } 608-5969 MATRIX 3 3 3 07 0 See Cod 50 5 les of the Received By: Received By Received/By Received By 12/10 0820 080 0101 0201 *TIME (SAMPLED) 0740 0850 っせい ンカセロ *PROJECT NAME: TOLINGON J. ZALINA NORTH NO. SITE LOCATION: STUJST N. LAND M LT. PO. NO. DW CERT NO.: *DATE 99/16 1400 999 Time Time Time *OFFICE LOC. EMAIL: LANDCIBATES AR GAXNO. -21-bu/25-28 45-5,5 124-27 22-42/22-76 25-28 3/8/6 -22/19-20 -21 (9-10 2-1722-Date Date Date *SAMPLE IDENTIFICATION 2-3 M.Shreed 2-60/ 112-Antim 100,00 12. easter Relinquished By: (3) Relinquished By: (2) Relinquished By: (4) nguished By SAMPLER(S) *CLIENT: LAB NO. و 80 0 J

The client (Client Name), by signing, or having client's agent sign, this "Sample Chain of Custody/Agreement Form", agrees to pay for the above requested services per the latest version of the Service Brochure or PSS-provided quotation including any and all attorney's or other reasonable fees if collection becomes necessary. * = REQUIRED 747-8770 • (800) 932-9047 5630 Baltimore National Pike • Route 40 West • Baltimore, Maryland 21228 • (410)

Version 1.000

SAMPLE CHAIN OF CUSTODY/AGREEMENT FORM

PHASE SEPARATION SCIENCE, INC.

www.phaseonline.com email: info@phaseonline.com

Time Received By: Contained By: Bota Deliverable: Contained By: Conta

The client (Client Name), by signing, or having client's agent sign, this "Sample Chain of Custody/Agreement Form", agrees to pay for the above requested services per the latest version of the Service Brochure or PSS-provided quotation including any and all attorney's or other reasonable fees if collection becomes necessary. * = REQUIRED



Phase Separation Science, Inc

Sample Receipt Checklist

Ice

Work Order # 16090921 Received By Rachel Davis

Client Name Icor Ltd. Date Received 09/09/2016 04:20:00 PM

Project Name Robinson Terminal North Delivered By Trans Time Express

Disposal Date 10/14/2016 Tracking No Not Applicable

Logged In By Rachel Davis

Present

Shipping Container(s)

No. of Coolers

		Ice	Present
Custody Seal(s) Intact?	N/A	Temp (deg C)	7
Seal(s) Signed / Dated?	N/A	Temp Blank Present	No

		Ice	Present
Custody Seal(s) Intact?	N/A	Temp (deg C)	8
Seal(s) Signed / Dated?	N/A	Temp Blank Present	No

Custody Seal(s) Intact?	N/A	Temp (deg C)	9
Seal(s) Signed / Dated?	N/A	Temp Blank Present	No

		Ice	Present
Custody Seal(s) Intact?	N/A	Temp (deg C)	11

Seal(s) Signed / Dated?

N/A

Temp Blank Present No

Documentation

COC agrees with sample labels?

Sampler Name

Mike Bruzzesi

MD DW Cert. No.

N/A

Chain of Custody Yes

Sample ContainerCustody Seal(s) Intact?Not ApplicableAppropriate for Specified Analysis?NoIntact?YesSeal(s) Signed / DatedNot Applicable

Labeled and Labels Legible? Yes

Total No. of Samples Received 13 Total No. of Containers Received 51

Preservation

Total Metals	(pH<2)	N/A
Dissolved Metals, filtered within 15 minutes of collection	(pH<2)	N/A
Orthophosphorus, filtered within 15 minutes of collection		N/A
Cyanides	(pH>12)	N/A
Sulfide	(pH>9)	N/A
TOC, DOC (field filtered), COD, Phenols	(pH<2)	N/A
TOX, TKN, NH3, Total Phos	(pH<2)	N/A
VOC, BTEX (VOA Vials Rcvd Preserved)	(pH<2)	Yes
Do VOA vials have zero headspace?		Yes
624 VOC (Rcvd at least one unpreserved VOA vial)		N/A
524 VOC (Rcvd with trip blanks)	(pH<2)	N/A



Phase Separation Science, Inc

Sample Receipt Checklist

Work Order # 16090921 Received By Rachel Davis

Client Name lcor Ltd. Date Received 09/09/2016 04:20:00 PM

Project Name Robinson Terminal North Delivered By Trans Time Express

Disposal Date 10/14/2016 Tracking No Not Applicable

Logged In By Rachel Davis

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Container label for COC sample M1Hpt-GW (25-28.5) reads M1Hpt-21 GW (25-28.5). Amber container received for sample M1Hpt-10-GW (25-28.5) is mis-labelled but confirmed per client, sampling date is 9/9/16, time 08:15 for all containers for this sample (internal IDs -012, -013).

Samples Inspected/Checklist Completed By:	Rachel Davis	Date: 09/09/2016
PM Review and Approval:	Simon Crisp	Date: <u>09/13/2016</u>

Analytical Report for

Icor Ltd.

Certificate of Analysis No.: 16092115

Project Manager: Mike Bruzzesi

Project Name: Robinson Terminal North Project Location: 500/501 N. Union St.



September 29, 2016
Phase Separation Science, Inc.
6630 Baltimore National Pike
Baltimore, MD 21228
Phone: (410) 747-8770

Fax: (410) 788-8723

OFFICES: 6630 BALTIMORE NATIONAL PIKE ROUTE 40 WEST BALTIMORE, MD 21228 410-747-8770 800-932-9047 FAX 410-788-8723

PHASE SEPARATION SCIENCE, INC.



September 29, 2016

Mike Bruzzesi Icor Ltd. PO Box 406 Middleburg, VA 20118

Reference: PSS Work Order(s) No: 16092115

Project Name: Robinson Terminal North Project Location: 500/501 N. Union St.

Dear Mike Bruzzesi:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Work Order(s) numbered **16092115**.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on October 26, 2016, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

Dan PrucnalLaboratory Manager



Sample Summary

Client Name: Icor Ltd.

Project Name: Robinson Terminal North

Work Order Number(s): 16092115

The following samples were received under chain of custody by Phase Separation Science (PSS) on 09/21/2016 at 02:45 pm

Lab Sample Id	Sample Id	Matrix Date/Time Collected	
16092115-001	TEC-MW2	GROUND WATER 09/21/16 08:30	
16092115-002	TEC-MW4	GROUND WATER 09/21/16 08:40	
16092115-003	ECS-MW4	GROUND WATER 09/21/16 10:30	
16092115-004	M1Hpt-15	GROUND WATER 09/21/16 11:45	
16092115-005	M1Hpt-08	GROUND WATER 09/21/16 09:45	
16092115-006	M1Hpt-07	GROUND WATER 09/21/16 12:20	
16092115-007	M1Hpt-05	GROUND WATER 09/21/16 11:15	

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

- 1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
- 2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
- 3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
- 4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminates, and part 141.3, for the secondary drinking water contaminates.
- 5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
- 6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
- 7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
- 8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

- B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- C Results Pending Final Confirmation.
- E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- Fail The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
- J The target analyte was positively identified below the reporting limit but greater than the MDL.
- MDL This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is an estimate of the minimum amount of a substance that an analytical process can reliably detect. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific.
- ND Not Detected at or above the reporting limit.
- RL PSS Reporting Limit.
- U Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156 State Certifications: MD 179, WV 303 Regulated Soil Permit: P330-12-00268 NSWC USCG Accepted Laboratory LDBE MWAA LD1997-0041-2015 OFFICES: 6630 BALTIMORE NATIONAL PIKE ROUTE 40 WEST BALTIMORE, MD 21228 410-747-8770 800-932-9047 FAX 410-788-8723

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16092115

Icor Ltd., Middleburg, VA

September 29, 2016

Project Name: Robinson Terminal North Project Location: 500/501 N. Union St.

Sample ID: TEC-MW2			Sampled: 09/21/		·	ID: 1609211	5-001	
Matrix: GROUND WATER	[Date/Time	Received: 09/21/	2016 14	:45			
Total Petroleum Hydrocarbons - DRO	Analytica	Analytical Method: SW-846 8015 C				Preparation Method: 3510C		
_	Result	Units	RL Flag	Dil	Prepared	Analyzed	Analyst	
TPH-DRO (Diesel Range Organics)	0.21	mg/L	0.10	1	09/23/16	09/25/16 23:16	3 1045	
Total Petroleum Hydrocarbons-GRO	Analytical Method: SW-846 8015C				Preparation Method: 5030B			
_	Result	Units	RL Flag	Dil	Prepared	Analyzed	Analyst	
TPH-GRO (Gasoline Range Organics)	ND	ug/L	100	1	09/22/16	09/22/16 10:43	3 1035	

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16092115

Icor Ltd., Middleburg, VA

September 29, 2016

Sample ID: TEC-MW2 Matrix: GROUND WATER	Date/Time Sampled: 09/21/2016 08:30 Date/Time Received: 09/21/2016 14:45			-				
TCL Volatile Organic Compounds		l Method: SV				Preparation Metl	nod: 5030B	
	Result	Units	RL	Flag l	Dil	Prepared	Analyzed	Analyst
Acetone	ND	ug/L	10		1	09/23/16	09/23/16 19:52	1011
Benzene	ND	ug/L	1.0		1	09/23/16	09/23/16 19:52	1011
Bromochloromethane	ND	ug/L	1.0		1	09/23/16	09/23/16 19:52	1011
Bromodichloromethane	ND	ug/L	1.0		1	09/23/16	09/23/16 19:52	1011
Bromoform	ND	ug/L	5.0		1	09/23/16	09/23/16 19:52	1011
Bromomethane	ND	ug/L	1.0		1	09/23/16	09/23/16 19:52	1011
2-Butanone (MEK)	ND	ug/L	10		1	09/23/16	09/23/16 19:52	1011
Carbon Disulfide	ND	ug/L	10		1	09/23/16	09/23/16 19:52	1011
Carbon Tetrachloride	ND	ug/L	1.0		1	09/23/16	09/23/16 19:52	1011
Chlorobenzene	ND	ug/L	1.0		1	09/23/16	09/23/16 19:52	1011
Chloroethane	ND	ug/L	1.0		1	09/23/16	09/23/16 19:52	1011
Chloroform	ND	ug/L	1.0		1	09/23/16	09/23/16 19:52	1011
Chloromethane	ND	ug/L	1.0		1	09/23/16	09/23/16 19:52	1011
Cyclohexane	ND	ug/L	10		1	09/23/16	09/23/16 19:52	1011
1,2-Dibromo-3-Chloropropane	ND	ug/L	10		1	09/23/16	09/23/16 19:52	1011
Dibromochloromethane	ND	ug/L	1.0		1	09/23/16	09/23/16 19:52	1011
1,2-Dibromoethane (EDB)	ND	ug/L	1.0		1	09/23/16	09/23/16 19:52	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	09/23/16	09/23/16 19:52	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	09/23/16	09/23/16 19:52	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	09/23/16	09/23/16 19:52	1011
Dichlorodifluoromethane	ND	ug/L	1.0		1	09/23/16	09/23/16 19:52	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	09/23/16	09/23/16 19:52	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	09/23/16	09/23/16 19:52	1011
cis-1,2-Dichloroethene	ND	ug/L	1.0		1	09/23/16	09/23/16 19:52	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	09/23/16	09/23/16 19:52	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	09/23/16	09/23/16 19:52	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	09/23/16	09/23/16 19:52	1011
trans-1,3-Dichloropropene	ND	ug/L	1.0		1	09/23/16	09/23/16 19:52	1011
trans-1,2-Dichloroethene	ND	ug/L	1.0		1	09/23/16	09/23/16 19:52	1011
Ethylbenzene	ND	ug/L	1.0		1	09/23/16	09/23/16 19:52	1011

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16092115

Icor Ltd., Middleburg, VA

September 29, 2016

Project Name: Robinson Terminal North Project Location: 500/501 N. Union St.

o-Xylene

Sample ID: TEC-MW2 Matrix: GROUND WATER			e Sampled: e Received:		PSS Sample	e ID: 1609211	5-001
TCL Volatile Organic Compounds			SW-846 8260		Preparation Meth	nod: 5030B	
	Result	Units	DI	Flag Dil	Prepared	Analyzed	Analyst
2-Hexanone	ND	ug/L		1 1ag 5 1	09/23/16	09/23/16 19:52	
Isopropylbenzene	ND	ug/L	1.0	1		09/23/16 19:52	
Methyl Acetate	ND	ug/L	10	1	09/23/16		
Methylcyclohexane	ND	ug/L	10	1		09/23/16 19:52	
Methylene Chloride	ND	ug/L	1.0	1	09/23/16		
4-Methyl-2-Pentanone	ND	ug/L	5.0	1	09/23/16	09/23/16 19:52	
Methyl-t-butyl ether	2.5	ug/L	1.0	1	09/23/16	09/23/16 19:52	1011
Naphthalene	ND	ug/L	1.0	1	09/23/16	09/23/16 19:52	1011
Styrene	ND	ug/L	1.0	1	09/23/16	09/23/16 19:52	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1	09/23/16	09/23/16 19:52	1011
Tetrachloroethene	ND	ug/L	1.0	1	09/23/16	09/23/16 19:52	1011
Toluene	ND	ug/L	1.0	1	09/23/16	09/23/16 19:52	1011
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1	09/23/16	09/23/16 19:52	1011
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1	09/23/16	09/23/16 19:52	1011
1,1,1-Trichloroethane	ND	ug/L	1.0	1	09/23/16	09/23/16 19:52	1011
1,1,2-Trichloroethane	ND	ug/L	1.0	1	09/23/16	09/23/16 19:52	1011
Trichloroethene	ND	ug/L	1.0	1	09/23/16	09/23/16 19:52	1011
Trichlorofluoromethane	ND	ug/L	5.0	1	09/23/16	09/23/16 19:52	1011
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	ug/L	1.0	1	09/23/16	09/23/16 19:52	1011
Vinyl Chloride	ND	ug/L	1.0	1	09/23/16	09/23/16 19:52	1011
m,p-Xylenes	ND	ug/L	2.0	1	09/23/16	09/23/16 19:52	1011

1.0

ND

ug/L

09/23/16 09/23/16 19:52 1011

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16092115

Icor Ltd., Middleburg, VA

September 29, 2016

Sample ID: TEC-MW4 Matrix: GROUND WATER	Date/Time Sampled: Date/Time Received:								
PP Metals	Analytica	l Method:	: SW-846 6020	Α	F	Preparation Method: 3010A			
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst	
Antimony	ND	ug/L	5.0		1	09/22/16	09/23/16 00:23	3 1033	
Arsenic	2.3	ug/L	1.0		1	09/22/16	09/23/16 15:11	1033	
Beryllium	ND	ug/L	1.0		1	09/22/16	09/23/16 00:23	3 1033	
Cadmium	ND	ug/L	1.0		1	09/22/16	09/23/16 00:23	3 1033	
Chromium	ND	ug/L	1.0		1	09/22/16	09/23/16 00:23	3 1033	
Copper	ND	ug/L	1.0		1	09/22/16	09/23/16 15:11	1033	
Lead	58	ug/L	1.0		1	09/22/16	09/23/16 15:11	1033	
Mercury	ND	ug/L	0.20		1	09/22/16	09/23/16 15:11	1033	
Nickel	ND	ug/L	1.0		1	09/22/16	09/23/16 00:23	3 1033	
Selenium	ND	ug/L	1.0		1	09/22/16	09/23/16 00:23	3 1033	
Silver	ND	ug/L	1.0		1	09/22/16	09/23/16 00:23	3 1033	
Thallium	ND	ug/L	1.0		1	09/22/16	09/23/16 00:23	3 1033	
Zinc	ND	ug/L	20		1	09/22/16	09/23/16 15:11	1033	
Total Petroleum Hydrocarbons - DRO	Analytica	l Method:	: SW-846 8015	С	F	Preparation Meth	nod: 3510C		
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst	
TPH-DRO (Diesel Range Organics)	0.21	mg/L	0.10		1	09/23/16	09/25/16 23:16	1045	
Total Petroleum Hydrocarbons-GRO	Analytica	Analytical Method: SW-846 8015C				Preparation Method: 5030B			
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst	
TPH-GRO (Gasoline Range Organics)	ND	ug/L	100		1	09/22/16	09/22/16 12:51	1035	

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

Date/Time Sampled: 09/21/2016 08:40 PSS Sample ID: 16092115-002

No: 16092115

Icor Ltd., Middleburg, VA

September 29, 2016

Project Name: Robinson Terminal North Project Location: 500/501 N. Union St.

Sample ID: TEC-MW4

Endosulfan sulfate

Endrin ketone

Toxaphene

Chlordane

Matrix: GROUND WATER	[Date/Time	Received:	09/21/201	16 14	:45		
Organochlorine Pesticides	Analytica	l Method: S	SW-846 8081	В		Preparation Metl	nod: 3510C	
	Result	Units	RL	Flag D	il	Prepared	Analyzed	Analyst
alpha-BHC	ND	ug/L	0.044		1	09/22/16	09/22/16 22:35	1029
gamma-BHC (Lindane)	ND	ug/L	0.044		1	09/22/16	09/22/16 22:35	1029
beta-BHC	ND	ug/L	0.044		1	09/22/16	09/22/16 22:35	1029
delta-BHC	ND	ug/L	0.044		1	09/22/16	09/22/16 22:35	1029
Heptachlor	ND	ug/L	0.044		1	09/22/16	09/22/16 22:35	1029
Aldrin	ND	ug/L	0.044		1	09/22/16	09/22/16 22:35	1029
Heptachlor epoxide	ND	ug/L	0.044		1	09/22/16	09/22/16 22:35	1029
gamma-Chlordane	ND	ug/L	0.044		1	09/22/16	09/22/16 22:35	1029
alpha-Chlordane	ND	ug/L	0.044		1	09/22/16	09/22/16 22:35	1029
4,4-DDE	ND	ug/L	0.044		1	09/22/16	09/22/16 22:35	1029
Endosulfan I	ND	ug/L	0.044		1	09/22/16	09/22/16 22:35	1029
Dieldrin	ND	ug/L	0.044		1	09/22/16	09/22/16 22:35	1029
Endrin	ND	ug/L	0.044		1	09/22/16	09/22/16 22:35	1029
4,4-DDD	ND	ug/L	0.044		1	09/22/16	09/22/16 22:35	1029
Endosulfan II	ND	ug/L	0.044		1	09/22/16	09/22/16 22:35	1029
4,4-DDT	ND	ug/L	0.044		1	09/22/16	09/22/16 22:35	1029
Endrin aldehyde	ND	ug/L	0.044		1	09/22/16	09/22/16 22:35	1029
Methoxychlor	ND	ug/L	0.044		1	09/22/16	09/22/16 22:35	1029

0.044

0.044

1.1

1.1

1

1

1

ND

ND

ND

ND

ug/L

ug/L

ug/L

ug/L

09/22/16 09/22/16 22:35 1029

09/22/16 09/22/16 22:35 1029 09/22/16 09/22/16 22:35 1029

09/22/16 09/22/16 22:35 1029

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16092115

Icor Ltd., Middleburg, VA

September 29, 2016

Sample ID: TEC-MW4		Date/Time	Sampled: 0	09/21/2016 08	:40 PSS Sampl	e ID: 16092115	5-002		
Matrix: GROUND WATER			-	9/21/2016 14					
Polychlorinated Biphenyls			V-846 8082 A		Preparation Method: 3510C Clean up Method: SW846 3665A				
	Result	Units	RL I	Flag Dil	Prepared	Analyzed	Analyst		
PCB-1016	ND	ug/L	0.56	1	09/22/16	09/22/16 20:25	1029		
PCB-1221	ND	ug/L	0.56	1	09/22/16	09/22/16 20:25	1029		
PCB-1232	ND	ug/L	0.56	1	09/22/16	09/22/16 20:25	1029		
PCB-1242	ND	ug/L	0.56	1	09/22/16	09/22/16 20:25	1029		
PCB-1248	ND	ug/L	0.56	1	09/22/16	09/22/16 20:25	1029		
PCB-1254	ND	ug/L	0.56	1	09/22/16	09/22/16 20:25	1029		
PCB-1260	ND	ug/L	0.56	1	09/22/16	09/22/16 20:25	1029		
Chlorinated Herbicides	Analytica	Analytical Method: SW-846 8151 A				Preparation Method: 8151A			
	Result	Units	RL I	Flag Dil	Prepared	Analyzed	Analyst		
Dalapon	ND	ug/L	4.6	10	09/26/16	09/27/16 12:18	1029		
Dicamba	ND	ug/L	0.19	10	09/26/16	09/27/16 12:18	1029		
MCPP	ND	ug/L	190	10	09/26/16	09/27/16 12:18	1029		
MCPA	ND	ug/L	190	10	09/26/16	09/27/16 12:18	1029		
Dichloroprop	ND	ug/L	1.9	10	09/26/16	09/27/16 12:18	1029		
2,4-D	ND	ug/L	1.9	10	09/26/16	09/27/16 12:18	1029		
2,4,5-TP (Silvex)	ND	ug/L	0.19	10	09/26/16	09/27/16 12:18	1029		
			0.40	10	09/26/16	09/27/16 12:18	1029		
2,4,5-T	ND	ug/L	0.19	10	03/20/10	09/21/10 12.10	1023		
2,4,5-T Dinoseb	ND ND	ug/L ug/L	0.19 0.96	10	09/26/16	09/27/16 12:18			

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16092115

Icor Ltd., Middleburg, VA

September 29, 2016

Sample ID: TEC-MW4 Matrix: GROUND WATER			e Sampled: Received:			• • • • • • • • • • • • • • • • • • •	e ID: 1609211	5-002
TCL Volatile Organic Compounds			SW-846 8260			Preparation Metl	nod: 5030B	
_	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acetone	ND	ug/L	10		1	09/23/16	09/23/16 20:14	4 1011
Benzene	ND	ug/L	1.0		1	09/23/16	09/23/16 20:14	4 1011
Bromochloromethane	ND	ug/L	1.0		1	09/23/16	09/23/16 20:14	4 1011
Bromodichloromethane	ND	ug/L	1.0		1	09/23/16	09/23/16 20:14	4 1011
Bromoform	ND	ug/L	5.0		1	09/23/16	09/23/16 20:14	4 1011
Bromomethane	ND	ug/L	1.0		1	09/23/16	09/23/16 20:14	4 1011
2-Butanone (MEK)	ND	ug/L	10		1	09/23/16	09/23/16 20:14	4 1011
Carbon Disulfide	ND	ug/L	10		1	09/23/16	09/23/16 20:14	4 1011
Carbon Tetrachloride	ND	ug/L	1.0		1	09/23/16	09/23/16 20:14	4 1011
Chlorobenzene	ND	ug/L	1.0		1	09/23/16	09/23/16 20:14	1 1011
Chloroethane	ND	ug/L	1.0		1	09/23/16	09/23/16 20:14	1 1011
Chloroform	ND	ug/L	1.0		1	09/23/16	09/23/16 20:14	4 1011
Chloromethane	ND	ug/L	1.0		1	09/23/16	09/23/16 20:14	4 1011
Cyclohexane	ND	ug/L	10		1	09/23/16	09/23/16 20:14	4 1011
1,2-Dibromo-3-Chloropropane	ND	ug/L	10		1	09/23/16	09/23/16 20:14	4 1011
Dibromochloromethane	ND	ug/L	1.0		1	09/23/16	09/23/16 20:14	4 1011
1,2-Dibromoethane (EDB)	ND	ug/L	1.0		1	09/23/16	09/23/16 20:14	4 1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	09/23/16	09/23/16 20:14	4 1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	09/23/16	09/23/16 20:14	4 1011
Dichlorodifluoromethane	ND	ug/L	1.0		1	09/23/16	09/23/16 20:14	4 1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	09/23/16	09/23/16 20:14	4 1011
1,1-Dichloroethane	ND	ug/L	1.0		1	09/23/16	09/23/16 20:14	4 1011
1,2-Dichloroethane	ND	ug/L	1.0		1	09/23/16	09/23/16 20:14	4 1011
cis-1,2-Dichloroethene	ND	ug/L	1.0		1	09/23/16	09/23/16 20:14	4 1011
1,1-Dichloroethene	ND	ug/L	1.0		1	09/23/16	09/23/16 20:14	4 1011
1,2-Dichloropropane	ND	ug/L	1.0		1	09/23/16	09/23/16 20:14	4 1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	09/23/16	09/23/16 20:14	1 1011
trans-1,3-Dichloropropene	ND	ug/L	1.0		1	09/23/16	09/23/16 20:14	1 1011
trans-1,2-Dichloroethene	ND	ug/L	1.0		1	09/23/16	09/23/16 20:14	1 1011
Ethylbenzene	ND	ug/L	1.0		1	09/23/16	09/23/16 20:14	4 1011

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16092115

Icor Ltd., Middleburg, VA

September 29, 2016

Sample ID: TEC-MW4		Date/Tim	ne Sampled:	09/21/2016	08:40	PSS Sample	e ID: 1609211	5-002
Matrix: GROUND WATER		Date/Tim	e Received:	09/21/2016	14:45			
TCL Volatile Organic Compounds	Analytica	l Method:	SW-846 8260	В	F	Preparation Meth	nod: 5030B	
_	Result	Units	RL	Flag Dil		Prepared	Analyzed	Analyst
2-Hexanone	ND	ug/L	10	1		09/23/16	09/23/16 20:14	1011
Isopropylbenzene	ND	ug/L	1.0	1		09/23/16	09/23/16 20:14	1011
Methyl Acetate	ND	ug/L	10	1		09/23/16	09/23/16 20:14	1011
Methylcyclohexane	ND	ug/L	10	1		09/23/16	09/23/16 20:14	1011
Methylene Chloride	ND	ug/L	1.0	1		09/23/16	09/23/16 20:14	1011
4-Methyl-2-Pentanone	ND	ug/L	5.0	1		09/23/16	09/23/16 20:14	1011
Methyl-t-butyl ether	ND	ug/L	1.0	1		09/23/16	09/23/16 20:14	1011
Naphthalene	ND	ug/L	1.0	1		09/23/16	09/23/16 20:14	1011
Styrene	ND	ug/L	1.0	1		09/23/16	09/23/16 20:14	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		09/23/16	09/23/16 20:14	1011
Tetrachloroethene	ND	ug/L	1.0	1		09/23/16	09/23/16 20:14	1011
Toluene	ND	ug/L	1.0	1		09/23/16	09/23/16 20:14	1011
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		09/23/16	09/23/16 20:14	1011
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		09/23/16	09/23/16 20:14	1011
1,1,1-Trichloroethane	ND	ug/L	1.0	1		09/23/16	09/23/16 20:14	1011
1,1,2-Trichloroethane	ND	ug/L	1.0	1		09/23/16	09/23/16 20:14	1011
Trichloroethene	ND	ug/L	1.0	1		09/23/16	09/23/16 20:14	1011
Trichlorofluoromethane	ND	ug/L	5.0	1		09/23/16	09/23/16 20:14	1011
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	ug/L	1.0	1		09/23/16	09/23/16 20:14	1011
Vinyl Chloride	ND	ug/L	1.0	1		09/23/16	09/23/16 20:14	1011
m,p-Xylenes	ND	ug/L	2.0	1		09/23/16	09/23/16 20:14	1011
o-Xylene	ND	ug/L	1.0	1		09/23/16	09/23/16 20:14	1011

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16092115

Icor Ltd., Middleburg, VA

September 29, 2016

Sample ID: TEC-MW4	Date/Time Sampled: 09/21/2016 08:40	PSS Sample ID: 16092115-002
Matrix: GROUND WATER	Date/Time Received: 09/21/2016 14:45	

TCL Semivolatile Organic Compounds	Analytica	l Method: SW	/-846 8270 C	;	Preparation Method: 3510C			
	Result	Units	RL I	Flag Dil	Prepared	Analyzed	Analyst	
Acenaphthene	ND	ug/L	5.0	1	09/21/16	09/22/16 18:25	5 1055	
Acenaphthylene	ND	ug/L	5.0	1	09/21/16	09/22/16 18:25	5 1055	
Acetophenone	ND	ug/L	5.0	1	09/21/16	09/22/16 18:25	5 1055	
Anthracene	ND	ug/L	5.0	1	09/21/16	09/22/16 18:25	5 1055	
Atrazine	ND	ug/L	5.0	1	09/21/16	09/22/16 18:25	5 1055	
Benzo(a)anthracene	ND	ug/L	5.0	1	09/21/16	09/22/16 18:25	5 1055	
Benzo(a)pyrene	ND	ug/L	5.0	1	09/21/16	09/22/16 18:25	5 1055	
Benzo(b)fluoranthene	ND	ug/L	5.0	1	09/21/16	09/22/16 18:25	5 1055	
Benzo(g,h,i)perylene	ND	ug/L	5.0	1	09/21/16	09/22/16 18:25	5 1055	
Benzo(k)fluoranthene	ND	ug/L	5.0	1	09/21/16	09/22/16 18:25	5 1055	
Biphenyl (Diphenyl)	ND	ug/L	5.0	1	09/21/16	09/22/16 18:25	5 1055	
Butyl benzyl phthalate	ND	ug/L	5.0	1	09/21/16	09/22/16 18:25	5 1055	
bis(2-chloroethoxy) methane	ND	ug/L	5.0	1	09/21/16	09/22/16 18:25	5 1055	
bis(2-chloroethyl) ether	ND	ug/L	5.0	1	09/21/16	09/22/16 18:25	5 1055	
bis(2-chloroisopropyl) ether	ND	ug/L	5.0	1	09/21/16	09/22/16 18:25	5 1055	
bis(2-ethylhexyl) phthalate	ND	ug/L	5.0	1	09/21/16	09/22/16 18:25	5 1055	
4-Bromophenylphenyl ether	ND	ug/L	5.0	1	09/21/16	09/22/16 18:25	5 1055	
Di-n-butyl phthalate	ND	ug/L	5.0	1	09/21/16	09/22/16 18:25	5 1055	
Carbazole	ND	ug/L	5.0	1	09/21/16	09/22/16 18:25	5 1055	
Caprolactam	ND	ug/L	5.0	1	09/21/16	09/22/16 18:25	5 1055	
4-Chloro-3-methyl phenol	ND	ug/L	5.0	1	09/21/16	09/22/16 18:25	5 1055	
4-Chloroaniline	ND	ug/L	5.0	1	09/21/16	09/22/16 18:25	5 1055	
2-Chloronaphthalene	ND	ug/L	5.0	1	09/21/16	09/22/16 18:25	5 1055	
2-Chlorophenol	ND	ug/L	5.0	1	09/21/16	09/22/16 18:25	5 1055	
4-Chlorophenyl Phenyl ether	ND	ug/L	5.0	1	09/21/16	09/22/16 18:25	5 1055	
Chrysene	ND	ug/L	5.0	1	09/21/16	09/22/16 18:25	5 1055	
Dibenz(a,h)Anthracene	ND	ug/L	5.0	1	09/21/16	09/22/16 18:25	5 1055	
Dibenzofuran	ND	ug/L	5.0	1	09/21/16	09/22/16 18:25	5 1055	
3,3-Dichlorobenzidine	ND	ug/L	5.0	1	09/21/16	09/22/16 18:25	5 1055	
2,4-Dichlorophenol	ND	ug/L	5.0	1	09/21/16	09/22/16 18:2	5 1055	

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16092115

Icor Ltd., Middleburg, VA

September 29, 2016

Sample ID: TEC-MW4	Date/Time Sampled: 09/21/2016 08:40	PSS Sample ID: 16092115-002
Matrix: GROUND WATER	Date/Time Received: 09/21/2016 14:45	

TCL Semivolatile Organic Compounds	Analytical Method: SW-846 8270 C				Preparation Method: 3510C			
	Result	Units	RL Flag	Dil	Prepared A	Analyzed	Analyst	
Diethyl phthalate	ND	ug/L	5.0	1	09/21/16 09	/22/16 18:25	1055	
Dimethyl phthalate	ND	ug/L	5.0	1	09/21/16 09	/22/16 18:25	1055	
2,4-Dimethylphenol	ND	ug/L	5.0	1	09/21/16 09	/22/16 18:25	1055	
4,6-Dinitro-2-methyl phenol	ND	ug/L	5.0	1	09/21/16 09	/22/16 18:25	1055	
2,4-Dinitrophenol	ND	ug/L	10	1	09/21/16 09	/22/16 18:25	1055	
2,4-Dinitrotoluene	ND	ug/L	5.0	1	09/21/16 09	/22/16 18:25	1055	
2,6-Dinitrotoluene	ND	ug/L	5.0	1	09/21/16 09	/22/16 18:25	1055	
Fluoranthene	ND	ug/L	5.0	1	09/21/16 09	/22/16 18:25	1055	
Fluorene	ND	ug/L	5.0	1	09/21/16 09	/22/16 18:25	1055	
Hexachlorobenzene	ND	ug/L	5.0	1	09/21/16 09	/22/16 18:25	1055	
Hexachlorobutadiene	ND	ug/L	5.0	1	09/21/16 09	/22/16 18:25	1055	
Hexachlorocyclopentadiene	ND	ug/L	5.0	1	09/21/16 09	/22/16 18:25	1055	
Hexachloroethane	ND	ug/L	5.0	1	09/21/16 09	/22/16 18:25	1055	
Indeno(1,2,3-c,d)Pyrene	ND	ug/L	5.0	1	09/21/16 09	/22/16 18:25	1055	
Isophorone	ND	ug/L	5.0	1	09/21/16 09	/22/16 18:25	1055	
2-Methylnaphthalene	ND	ug/L	5.0	1	09/21/16 09	/22/16 18:25	1055	
2-Methyl phenol	ND	ug/L	5.0	1	09/21/16 09	/22/16 18:25	1055	
3&4-Methylphenol	ND	ug/L	5.0	1	09/21/16 09	/22/16 18:25	1055	
Naphthalene	ND	ug/L	5.0	1	09/21/16 09	/22/16 18:25	1055	
2-Nitroaniline	ND	ug/L	5.0	1	09/21/16 09	/22/16 18:25	1055	
3-Nitroaniline	ND	ug/L	5.0	1	09/21/16 09	/22/16 18:25	1055	
4-Nitroaniline	ND	ug/L	5.0	1	09/21/16 09	/22/16 18:25	1055	
Nitrobenzene	ND	ug/L	5.0	1	09/21/16 09	/22/16 18:25	1055	
2-Nitrophenol	ND	ug/L	5.0	1	09/21/16 09	/22/16 18:25	1055	
4-Nitrophenol	ND	ug/L	5.0	1	09/21/16 09	/22/16 18:25	1055	
N-Nitrosodi-n-propyl amine	ND	ug/L	5.0	1	09/21/16 09	/22/16 18:25	1055	
N-Nitrosodiphenylamine	ND	ug/L	5.0	1	09/21/16 09	/22/16 18:25	1055	
Di-n-octyl phthalate	ND	ug/L	5.0	1	09/21/16 09	/22/16 18:25	1055	
Pentachlorophenol	ND	ug/L	5.0	1	09/21/16 09	/22/16 18:25	1055	
Phenanthrene	ND	ug/L	5.0	1	09/21/16 09	/22/16 18:25	1055	

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16092115

Icor Ltd., Middleburg, VA

September 29, 2016

Sample ID: TEC-MW4 Matrix: GROUND WATER			Sampled: 09/2 Received: ^{09/2}			e ID: 1609211	5-002
TCL Semivolatile Organic Compounds	Analytica	l Method: S	W-846 8270 C	Preparation Method: 3510C			
	Result	Units	RL Flag	j Dil	Prepared	Analyzed	Analyst
Phenol	ND	ug/L	5.0	1	09/21/16	09/22/16 18:25	5 1055
Pyrene	ND	ug/L	5.0	1	09/21/16	09/22/16 18:25	5 1055
Pyridine	ND	ug/L	5.0	1	09/21/16	09/22/16 18:25	5 1055
2,4,5-Trichlorophenol	ND	ug/L	5.0	1	09/21/16	09/22/16 18:25	5 1055
2,4,6-Trichlorophenol	ND	ug/L	5.0	1	09/21/16	09/22/16 18:25	5 1055

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16092115

Icor Ltd., Middleburg, VA

September 29, 2016

Sample ID: ECS-MW4 Matrix: GROUND WATER		Date/Time Sampled: 09/21/2016 10:30 Date/Time Received: 09/21/2016 14:45					•			
PP Metals	Analytica	l Method:	SW-846 6020	Α	F	Preparation Method: 3010A				
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst		
Antimony	ND	ug/L	5.0		1	09/22/16	09/23/16 00:29	1033		
Arsenic	9.1	ug/L	1.0		1	09/22/16	09/23/16 15:17	7 1033		
Beryllium	ND	ug/L	1.0		1	09/22/16	09/23/16 15:17	7 1033		
Cadmium	ND	ug/L	1.0		1	09/22/16	09/23/16 00:29	1033		
Chromium	ND	ug/L	1.0		1	09/22/16	09/23/16 00:29	1033		
Copper	ND	ug/L	1.0		1	09/22/16	09/23/16 15:17	7 1033		
Lead	ND	ug/L	1.0		1	09/22/16	09/23/16 15:17	7 1033		
Mercury	ND	ug/L	0.20		1	09/22/16	09/23/16 15:17	7 1033		
Nickel	ND	ug/L	1.0		1	09/22/16	09/23/16 00:29	1033		
Selenium	ND	ug/L	1.0		1	09/22/16	09/23/16 00:29	1033		
Silver	ND	ug/L	1.0		1	09/22/16	09/23/16 00:29	1033		
Thallium	ND	ug/L	1.0		1	09/22/16	09/23/16 00:29	1033		
Zinc	ND	ug/L	20		1	09/22/16	09/23/16 15:17	7 1033		
Total Petroleum Hydrocarbons - DRO	Analytica	l Method:	SW-846 8015	С	F	Preparation Meth	nod: 3510C			
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst		
TPH-DRO (Diesel Range Organics)	ND	mg/L	0.10		1	09/23/16	09/25/16 23:41	I 1045		
Total Petroleum Hydrocarbons-GRO	Analytica	Analytical Method: SW-846 8015C				Preparation Meth	nod: 5030B			
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst		
TPH-GRO (Gasoline Range Organics)	ND	ug/L	100		1	09/22/16	09/22/16 13:17	7 1035		

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16092115

Icor Ltd., Middleburg, VA

September 29, 2016

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Organochlorine Pesticides	Analytical	Method:	SW-846 808	1 B		Preparation Metho	od: 3510C	
Matrix: GROUND WATER	D	ate/Tim	e Received	09/21	/2016 14:4	5		
Sample ID: ECS-IVIVV4	L	pate/ i im	ie Sampied	. 09/21	1/2016 10:30	U PSS Sample	ID: 160921	15-003

Organicamental Collolado	Analytica	i wethou. O	VV-040 0001 1	Ь	1 reparation wiet	100. 33100	
_	Result	Units	RL	Flag Dil	Prepared	Analyzed	Analyst
alpha-BHC	ND	ug/L	0.040	1	09/22/16	09/22/16 19:4	7 1029
gamma-BHC (Lindane)	ND	ug/L	0.040	1	09/22/16	09/22/16 19:4	7 1029
beta-BHC	ND	ug/L	0.040	1	09/22/16	09/22/16 19:4	7 1029
delta-BHC	ND	ug/L	0.040	1	09/22/16	09/22/16 19:4	7 1029
Heptachlor	ND	ug/L	0.040	1	09/22/16	09/22/16 19:4	7 1029
Aldrin	ND	ug/L	0.040	1	09/22/16	09/22/16 19:4	7 1029
Heptachlor epoxide	ND	ug/L	0.040	1	09/22/16	09/22/16 19:4	7 1029
gamma-Chlordane	ND	ug/L	0.040	1	09/22/16	09/22/16 19:4	7 1029
alpha-Chlordane	ND	ug/L	0.040	1	09/22/16	09/22/16 19:4	7 1029
4,4-DDE	ND	ug/L	0.040	1	09/22/16	09/22/16 19:4	7 1029
Endosulfan I	ND	ug/L	0.040	1	09/22/16	09/22/16 19:4	7 1029
Dieldrin	ND	ug/L	0.040	1	09/22/16	09/22/16 19:4	7 1029
Endrin	ND	ug/L	0.040	1	09/22/16	09/22/16 19:4	7 1029
4,4-DDD	ND	ug/L	0.040	1	09/22/16	09/22/16 19:4	7 1029
Endosulfan II	ND	ug/L	0.040	1	09/22/16	09/22/16 19:4	7 1029
4,4-DDT	ND	ug/L	0.040	1	09/22/16	09/22/16 19:4	7 1029
Endrin aldehyde	ND	ug/L	0.040	1	09/22/16	09/22/16 19:4	7 1029
Methoxychlor	ND	ug/L	0.040	1	09/22/16	09/22/16 19:4	7 1029
Endosulfan sulfate	ND	ug/L	0.040	1	09/22/16	09/22/16 19:4	7 1029
Endrin ketone	ND	ug/L	0.040	1	09/22/16	09/22/16 19:4	7 1029
Toxaphene	ND	ug/L	1.0	1	09/22/16	09/22/16 19:4	7 1029
Chlordane	ND	ug/L	1.0	1	09/22/16	09/22/16 19:4	7 1029

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16092115

Icor Ltd., Middleburg, VA

September 29, 2016

Sample ID: ECS-MW4		Date/Time	-			• • • • • • • • • • • • • • • • • • •	e ID: 16092115	5-003
Matrix: GROUND WATER		Date/Time F			2010 14:			
Polychlorinated Biphenyls	Analytica	l Method: SV	V-846 8082	Α		Preparation Method		
	Result	Units	RL	Flag	Dil	Prepared		Analyst
PCB-1016	ND	ug/L	0.50		1	09/22/16	09/22/16 19:56	1029
PCB-1221	ND	ug/L	0.50		1	09/22/16	09/22/16 19:56	1029
PCB-1232	ND	ug/L	0.50		1	09/22/16	09/22/16 19:56	1029
PCB-1242	ND	ug/L	0.50		1	09/22/16	09/22/16 19:56	1029
PCB-1248	ND	ug/L	0.50		1	09/22/16	09/22/16 19:56	1029
PCB-1254	ND	ug/L	0.50		1	09/22/16	09/22/16 19:56	1029
PCB-1260	ND	ug/L	0.50		1	09/22/16	09/22/16 19:56	1029
Chlorinated Herbicides	Analytica	l Method: SV	V-846 8151	Α		Preparation Meth	nod: 8151A	
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Dalapon	Result ND	Units ug/L	RL 4.6	Flag	Dil	Prepared 09/26/16	Analyzed 09/28/16 00:46	
Dalapon Dicamba				Flag				1029
•	ND	ug/L	4.6	Flag	10	09/26/16	09/28/16 00:46	1029 1029
Dicamba	ND ND	ug/L ug/L	4.6 0.19	Flag	10 10	09/26/16 09/26/16	09/28/16 00:46 09/28/16 00:46	1029 1029 1029
Dicamba MCPP	ND ND ND	ug/L ug/L ug/L	4.6 0.19 190	Flag	10 10 10	09/26/16 09/26/16 09/26/16	09/28/16 00:46 09/28/16 00:46 09/28/16 00:46	1029 1029 1029 1029
Dicamba MCPP MCPA	ND ND ND ND	ug/L ug/L ug/L ug/L	4.6 0.19 190 190	Flag	10 10 10 10	09/26/16 09/26/16 09/26/16 09/26/16	09/28/16 00:46 09/28/16 00:46 09/28/16 00:46 09/28/16 00:46	1029 1029 1029 1029 1029
Dicamba MCPP MCPA Dichloroprop	ND ND ND ND	ug/L ug/L ug/L ug/L ug/L	4.6 0.19 190 190 1.9	Flag	10 10 10 10 10	09/26/16 09/26/16 09/26/16 09/26/16	09/28/16 00:46 09/28/16 00:46 09/28/16 00:46 09/28/16 00:46 09/28/16 00:46	1029 1029 1029 1029 1029 1029
Dicamba MCPP MCPA Dichloroprop 2,4-D	ND ND ND ND ND	ug/L ug/L ug/L ug/L ug/L ug/L	4.6 0.19 190 190 1.9	Flag	10 10 10 10 10 10	09/26/16 09/26/16 09/26/16 09/26/16 09/26/16	09/28/16 00:46 09/28/16 00:46 09/28/16 00:46 09/28/16 00:46 09/28/16 00:46	1029 1029 1029 1029 1029 1029 1029
Dicamba MCPP MCPA Dichloroprop 2,4-D 2,4,5-TP (Silvex)	ND ND ND ND ND ND	ug/L ug/L ug/L ug/L ug/L ug/L	4.6 0.19 190 190 1.9 0.19	Flag	10 10 10 10 10 10	09/26/16 09/26/16 09/26/16 09/26/16 09/26/16 09/26/16	09/28/16 00:46 09/28/16 00:46 09/28/16 00:46 09/28/16 00:46 09/28/16 00:46 09/28/16 00:46	1029 1029 1029 1029 1029 1029 1029 1029

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

Date/Time Sampled: 09/21/2016 10:30 PSS Sample ID: 16092115-003

No: 16092115

Icor Ltd., Middleburg, VA

September 29, 2016

Project Name: Robinson Terminal North Project Location: 500/501 N. Union St.

Sample ID: ECS-MW4

Ethylbenzene

Matrix: GROUND WATER		Date/Time	e Received:	09/21/2016 14	:45		
TCL Volatile Organic Compounds			SW-846 8260		Preparation Meth	nod: 5030B	
_	Result	Units	RL	Flag Dil	Prepared	Analyzed	Analyst
Acetone	ND	ug/L	10	1	09/23/16	09/23/16 20:36	1011
Benzene	ND	ug/L	1.0	1	09/23/16	09/23/16 20:36	1011
Bromochloromethane	ND	ug/L	1.0	1	09/23/16	09/23/16 20:36	1011
Bromodichloromethane	ND	ug/L	1.0	1	09/23/16	09/23/16 20:36	1011
Bromoform	ND	ug/L	5.0	1	09/23/16	09/23/16 20:36	1011
Bromomethane	ND	ug/L	1.0	1	09/23/16	09/23/16 20:36	1011
2-Butanone (MEK)	ND	ug/L	10	1	09/23/16	09/23/16 20:36	1011
Carbon Disulfide	ND	ug/L	10	1	09/23/16	09/23/16 20:36	1011
Carbon Tetrachloride	ND	ug/L	1.0	1	09/23/16	09/23/16 20:36	1011
Chlorobenzene	ND	ug/L	1.0	1	09/23/16	09/23/16 20:36	1011
Chloroethane	ND	ug/L	1.0	1	09/23/16	09/23/16 20:36	1011
Chloroform	ND	ug/L	1.0	1	09/23/16	09/23/16 20:36	1011
Chloromethane	ND	ug/L	1.0	1	09/23/16	09/23/16 20:36	1011
Cyclohexane	ND	ug/L	10	1	09/23/16	09/23/16 20:36	1011
1,2-Dibromo-3-Chloropropane	ND	ug/L	10	1	09/23/16	09/23/16 20:36	1011
Dibromochloromethane	ND	ug/L	1.0	1	09/23/16	09/23/16 20:36	1011
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1	09/23/16	09/23/16 20:36	1011
1,2-Dichlorobenzene	ND	ug/L	1.0	1	09/23/16	09/23/16 20:36	1011
1,3-Dichlorobenzene	ND	ug/L	1.0	1	09/23/16	09/23/16 20:36	1011
Dichlorodifluoromethane	ND	ug/L	1.0	1	09/23/16	09/23/16 20:36	1011
1,4-Dichlorobenzene	ND	ug/L	1.0	1	09/23/16	09/23/16 20:36	1011
1,1-Dichloroethane	ND	ug/L	1.0	1	09/23/16	09/23/16 20:36	1011
1,2-Dichloroethane	ND	ug/L	1.0	1	09/23/16	09/23/16 20:36	1011
1,1-Dichloroethene	ND	ug/L	1.0	1	09/23/16	09/23/16 20:36	1011
cis-1,2-Dichloroethene	ND	ug/L	1.0	1	09/23/16	09/23/16 20:36	1011
1,2-Dichloropropane	ND	ug/L	1.0	1	09/23/16	09/23/16 20:36	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0	1	09/23/16	09/23/16 20:36	1011
trans-1,3-Dichloropropene	ND	ug/L	1.0	1	09/23/16	09/23/16 20:36	1011
trans-1,2-Dichloroethene	ND	ug/L	1.0	1	09/23/16	09/23/16 20:36	1011

1.0

ND

ug/L

09/23/16 09/23/16 20:36 1011

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

Date/Time Sampled: 09/21/2016 10:30 PSS Sample ID: 16092115-003

No: 16092115

Icor Ltd., Middleburg, VA

September 29, 2016

Project Name: Robinson Terminal North Project Location: 500/501 N. Union St.

Sample ID: ECS-MW4

Trichlorofluoromethane

Vinyl Chloride

m,p-Xylenes

o-Xylene

1,1,2-Trichloro-1,2,2-Trifluoroethane

Matrix: GROUND WATER		ate/Tim	ne Received:	09/21/201	6 14:	45		
TCL Volatile Organic Compounds	Analytical	Method:	SW-846 8260	В		Preparation Meth	nod: 5030B	
_	Result	Units	RL	Flag Di		Prepared	Analyzed	Analyst
2-Hexanone	ND	ug/L	10		1	09/23/16	09/23/16 20:36	1011
Isopropylbenzene	ND	ug/L	1.0		1	09/23/16	09/23/16 20:36	1011
Methyl Acetate	ND	ug/L	10		1	09/23/16	09/23/16 20:36	1011
Methylcyclohexane	ND	ug/L	10		1	09/23/16	09/23/16 20:36	1011
Methylene Chloride	ND	ug/L	1.0		1	09/23/16	09/23/16 20:36	1011
4-Methyl-2-Pentanone	ND	ug/L	5.0		1	09/23/16	09/23/16 20:36	1011
Methyl-t-butyl ether	3.7	ug/L	1.0		1	09/23/16	09/23/16 20:36	1011
Naphthalene	ND	ug/L	1.0		1	09/23/16	09/23/16 20:36	1011
Styrene	ND	ug/L	1.0		1	09/23/16	09/23/16 20:36	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	09/23/16	09/23/16 20:36	1011
Tetrachloroethene	ND	ug/L	1.0		1	09/23/16	09/23/16 20:36	1011
Toluene	ND	ug/L	1.0		1	09/23/16	09/23/16 20:36	1011
1,2,3-Trichlorobenzene	ND	ug/L	1.0		1	09/23/16	09/23/16 20:36	1011
1,2,4-Trichlorobenzene	ND	ug/L	1.0		1	09/23/16	09/23/16 20:36	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	09/23/16	09/23/16 20:36	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	09/23/16	09/23/16 20:36	1011
Trichloroethene	ND	ug/L	1.0		1	09/23/16	09/23/16 20:36	1011

5.0

1.0

1.0

2.0

1.0

1

1

1

1

ND

ND

ND

ND

ND

ug/L

ug/L

ug/L

ug/L

ug/L

09/23/16 09/23/16 20:36 1011

09/23/16 09/23/16 20:36 1011

09/23/16 09/23/16 20:36 1011 09/23/16 09/23/16 20:36 1011

09/23/16 09/23/16 20:36 1011

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16092115

Icor Ltd., Middleburg, VA

September 29, 2016

Sample ID: ECS-MW4 Matrix: GROUND WATER	Date/Time Sampled: 09/21/2016 10:30 Date/Time Received: 09/21/2016 14:45									
TCL Semivolatile Organic Compounds		I Method: S\				Preparation Method: 3510C				
	D 14	11:4-	D.	Flag Dil		Duamanad	A a l a d	A l 4		
	Result	Units	RL 5.0		1	Prepared	Analyzed	Analyst		
Acceptable	ND	ug/L	5.0				09/22/16 18:52 09/22/16 18:52			
Acetaphanana	ND	ug/L			1 1					
Actorphenone	ND	ug/L	5.0				09/22/16 18:52			
Anthracene	ND	ug/L	5.0		1		09/22/16 18:52			
Atrazine	ND	ug/L	5.0		1		09/22/16 18:52			
Benzo(a)anthracene	ND	ug/L	5.0		1		09/22/16 18:52			
Benzo(a)pyrene	ND	ug/L	5.0		1		09/22/16 18:52			
Benzo(b)fluoranthene	ND	ug/L	5.0		1		09/22/16 18:52			
Benzo(g,h,i)perylene	ND	ug/L	5.0		1		09/22/16 18:52			
Benzo(k)fluoranthene	ND	ug/L	5.0		1		09/22/16 18:52			
Biphenyl (Diphenyl)	ND	ug/L	5.0		1		09/22/16 18:52			
Butyl benzyl phthalate	ND	ug/L	5.0		1		09/22/16 18:52			
bis(2-chloroethoxy) methane	ND	ug/L	5.0		1		09/22/16 18:52			
bis(2-chloroethyl) ether	ND	ug/L	5.0		1		09/22/16 18:52			
bis(2-chloroisopropyl) ether	ND	ug/L 	5.0		1		09/22/16 18:52			
bis(2-ethylhexyl) phthalate	ND	ug/L 	5.0		1		09/22/16 18:52			
4-Bromophenylphenyl ether	ND	ug/L	5.0		1		09/22/16 18:52			
Di-n-butyl phthalate	ND	ug/L	5.0		1		09/22/16 18:52			
Carbazole	ND	ug/L	5.0		1		09/22/16 18:52			
Caprolactam	ND	ug/L	5.0		1		09/22/16 18:52			
4-Chloro-3-methyl phenol	ND	ug/L	5.0		1		09/22/16 18:52			
4-Chloroaniline	ND	ug/L	5.0		1	09/21/16	09/22/16 18:52	1055		
2-Chloronaphthalene	ND	ug/L	5.0		1		09/22/16 18:52			
2-Chlorophenol	ND	ug/L	5.0		1		09/22/16 18:52			
4-Chlorophenyl Phenyl ether	ND	ug/L	5.0		1	09/21/16	09/22/16 18:52	1055		
Chrysene	ND	ug/L	5.0		1	09/21/16	09/22/16 18:52	1055		
Dibenz(a,h)Anthracene	ND	ug/L	5.0		1	09/21/16	09/22/16 18:52	1055		
Dibenzofuran	ND	ug/L	5.0		1	09/21/16	09/22/16 18:52	1055		
3,3-Dichlorobenzidine	ND	ug/L	5.0		1	09/21/16	09/22/16 18:52	1055		
2,4-Dichlorophenol	ND	ug/L	5.0		1	09/21/16	09/22/16 18:52	1055		

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16092115

Icor Ltd., Middleburg, VA

September 29, 2016

Sample ID: ECS-MW4	Date/Time Sampled: 09/21/2016 10:30	PSS Sample ID: 16092115-003
Matrix: GROUND WATER	Date/Time Received: 09/21/2016 14:45	

TCL Semivolatile Organic Compounds	Analytica	ll Method: SW	/-846 8270 C		Preparation Method: 3510C				
	Result	Units	RL	Flag Dil	Prepared	Analyzed	Analyst		
Diethyl phthalate	ND	ug/L	5.0	1	09/21/16	09/22/16 18:52	2 1055		
Dimethyl phthalate	ND	ug/L	5.0	1	09/21/16	09/22/16 18:52	2 1055		
2,4-Dimethylphenol	ND	ug/L	5.0	1	09/21/16	09/22/16 18:52	2 1055		
4,6-Dinitro-2-methyl phenol	ND	ug/L	5.0	1	09/21/16	09/22/16 18:52	2 1055		
2,4-Dinitrophenol	ND	ug/L	10	1	09/21/16	09/22/16 18:52	2 1055		
2,4-Dinitrotoluene	ND	ug/L	5.0	1	09/21/16	09/22/16 18:52	2 1055		
2,6-Dinitrotoluene	ND	ug/L	5.0	1	09/21/16	09/22/16 18:52	2 1055		
Fluoranthene	ND	ug/L	5.0	1	09/21/16	09/22/16 18:52	2 1055		
Fluorene	ND	ug/L	5.0	1	09/21/16	09/22/16 18:52	2 1055		
Hexachlorobenzene	ND	ug/L	5.0	1	09/21/16	09/22/16 18:52	2 1055		
Hexachlorobutadiene	ND	ug/L	5.0	1	09/21/16	09/22/16 18:52	2 1055		
Hexachlorocyclopentadiene	ND	ug/L	5.0	1	09/21/16	09/22/16 18:52	2 1055		
Hexachloroethane	ND	ug/L	5.0	1	09/21/16	09/22/16 18:52	2 1055		
Indeno(1,2,3-c,d)Pyrene	ND	ug/L	5.0	1	09/21/16	09/22/16 18:52	2 1055		
Isophorone	ND	ug/L	5.0	1	09/21/16	09/22/16 18:52	2 1055		
2-Methylnaphthalene	ND	ug/L	5.0	1	09/21/16	09/22/16 18:52	2 1055		
2-Methyl phenol	ND	ug/L	5.0	1	09/21/16	09/22/16 18:52	2 1055		
3&4-Methylphenol	ND	ug/L	5.0	1	09/21/16	09/22/16 18:52	2 1055		
Naphthalene	ND	ug/L	5.0	1	09/21/16	09/22/16 18:52	2 1055		
2-Nitroaniline	ND	ug/L	5.0	1	09/21/16	09/22/16 18:52	2 1055		
3-Nitroaniline	ND	ug/L	5.0	1	09/21/16	09/22/16 18:52	2 1055		
4-Nitroaniline	ND	ug/L	5.0	1	09/21/16	09/22/16 18:52	2 1055		
Nitrobenzene	ND	ug/L	5.0	1	09/21/16	09/22/16 18:52	2 1055		
2-Nitrophenol	ND	ug/L	5.0	1	09/21/16	09/22/16 18:52	2 1055		
4-Nitrophenol	ND	ug/L	5.0	1	09/21/16	09/22/16 18:52	2 1055		
N-Nitrosodi-n-propyl amine	ND	ug/L	5.0	1	09/21/16	09/22/16 18:52	2 1055		
N-Nitrosodiphenylamine	ND	ug/L	5.0	1	09/21/16	09/22/16 18:52	2 1055		
Di-n-octyl phthalate	ND	ug/L	5.0	1	09/21/16	09/22/16 18:52	2 1055		
Pentachlorophenol	ND	ug/L	5.0	1	09/21/16	09/22/16 18:52	2 1055		
Phenanthrene	ND	ug/L	5.0	1	09/21/16	09/22/16 18:52	2 1055		

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16092115

Icor Ltd., Middleburg, VA

September 29, 2016

Sample ID: ECS-MW4 Matrix: GROUND WATER			e Sampled: e Received:			-	e ID: 1609211	5-003
TCL Semivolatile Organic Compounds	Analytica	l Method:	SW-846 8270	С		Preparation Meth	nod: 3510C	
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Phenol	ND	ug/L	5.0		1	09/21/16	09/22/16 18:52	2 1055
Pyrene	ND	ug/L	5.0		1	09/21/16	09/22/16 18:52	2 1055
Pyridine	ND	ug/L	5.0		1	09/21/16	09/22/16 18:52	2 1055
2,4,5-Trichlorophenol	ND	ug/L	5.0		1	09/21/16	09/22/16 18:52	2 1055
2,4,6-Trichlorophenol	ND	ug/L	5.0		1	09/21/16	09/22/16 18:52	2 1055

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16092115

Icor Ltd., Middleburg, VA

September 29, 2016

Sample ID: M1Hpt-15 Matrix: GROUND WATER			Sampled:(Received:(PSS Sample	e ID: 1609211	5-004
PP Metals			V-846 6020 A			Preparation Meth	nod: 3010A	
_	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Antimony	ND	ug/L	5.0		1	09/22/16	09/23/16 00:35	1033
Arsenic	51	ug/L	1.0		1	09/22/16	09/23/16 15:23	1033
Beryllium	ND	ug/L	1.0		1	09/22/16	09/23/16 15:23	3 1033
Cadmium	13	ug/L	1.0		1	09/22/16	09/23/16 00:35	1033
Chromium	ND	ug/L	1.0		1	09/22/16	09/23/16 00:35	1033
Copper	12	ug/L	1.0		1	09/22/16	09/23/16 15:23	1033
Lead	ND	ug/L	1.0		1	09/22/16	09/23/16 15:23	1033
Mercury	ND	ug/L	0.20		1	09/22/16	09/23/16 15:23	1033
Nickel	3.4	ug/L	1.0		1	09/22/16	09/23/16 00:35	1033
Selenium	1.6	ug/L	1.0		1	09/22/16	09/23/16 00:35	1033
Silver	ND	ug/L	1.0		1	09/22/16	09/23/16 00:35	1033
Thallium	ND	ug/L	1.0		1	09/22/16	09/23/16 00:35	1033
Zinc	3,800	ug/L	2,000		100	09/22/16	09/26/16 17:08	3 1033
Total Petroleum Hydrocarbons - DRO	Analytica	l Method: SV	V-846 8015 (С	F	Preparation Meth	nod: 3510C	
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-DRO (Diesel Range Organics)	ND	mg/L	0.10		1	09/23/16	09/25/16 23:41	1045
Total Petroleum Hydrocarbons-GRO	Analytica	l Method: SV	V-846 8015C		F	Preparation Meth	nod: 5030B	
_	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-GRO (Gasoline Range Organics)	ND	ug/L	100		1	09/22/16	09/22/16 13:42	1035

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16092115

Icor Ltd., Middleburg, VA

September 29, 2016

Sample ID: M1Hpt-15		Date/Time	e Sampled:	09/21/2	2016 11:45	PSS Sample	e ID: 16092115	5-004
Matrix: GROUND WATER	D	ate/Time	Received:	09/21/2	2016 14:45			
Organochlorine Pesticides Ana	lytical	Method: S	SW-846 8081	В		Preparation Meth	nod: 3510C	
Re	sult	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
alpha-BHC	ND	ug/L	0.040		1	09/22/16	09/22/16 22:07	1029
gamma-BHC (Lindane)	ND	ug/L	0.040		1	09/22/16	09/22/16 22:07	1029
beta-BHC	ND	ug/L	0.040		1	09/22/16	09/22/16 22:07	1029
delta-BHC	ND	ug/L	0.040		1	09/22/16	09/22/16 22:07	1029
Heptachlor	ND	ug/L	0.040		1	09/22/16	09/22/16 22:07	1029
Aldrin	ND	ug/L	0.040		1	09/22/16	09/22/16 22:07	1029
Heptachlor epoxide	ND	ug/L	0.040		1	09/22/16	09/22/16 22:07	1029
gamma-Chlordane	ND	ug/L	0.040		1	09/22/16	09/22/16 22:07	1029
alpha-Chlordane	ND	ug/L	0.040		1	09/22/16	09/22/16 22:07	1029
4,4-DDE	ND	ug/L	0.040		1	09/22/16	09/22/16 22:07	1029
Endosulfan I	ND	ug/L	0.040		1	09/22/16	09/22/16 22:07	1029
Dieldrin	ND	ug/L	0.040		1	09/22/16	09/22/16 22:07	1029
Endrin	ND	ug/L	0.040		1	09/22/16	09/22/16 22:07	1029
4,4-DDD	ND	ug/L	0.040		1	09/22/16	09/22/16 22:07	1029
Endosulfan II	ND	ug/L	0.040		1	09/22/16	09/22/16 22:07	1029
4,4-DDT	ND	ug/L	0.040		1	09/22/16	09/22/16 22:07	1029
Endrin aldehyde	ND	ug/L	0.040		1	09/22/16	09/22/16 22:07	1029
Methoxychlor	ND	ug/L	0.040		1	09/22/16	09/22/16 22:07	1029
Endosulfan sulfate	ND	ug/L	0.040		1	09/22/16	09/22/16 22:07	1029
Endrin ketone	ND	ug/L	0.040		1	09/22/16	09/22/16 22:07	1029
Toxaphene	ND	ug/L	1.0		1	09/22/16	09/22/16 22:07	1029
Chlordane	ND	ug/L	1.0		1	09/22/16	09/22/16 22:07	1029

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16092115

Icor Ltd., Middleburg, VA

September 29, 2016

Sample ID: M1Hpt-15			ne Sampled:			e ID: 16092115	5-004
Matrix: GROUND WATER			e Received:				
Polychlorinated Biphenyls	Analytica	I Method:	SW-846 8082	Α	Preparation Meth		
	Result	Units	RL	Flag Dil	Clean up Method Prepared	: SW846 3665A Analyzed	Analyst
PCB-1016	ND	ug/L	0.50	1	09/22/16	09/22/16 19:27	1029
PCB-1221	ND	ug/L	0.50	1	09/22/16	09/22/16 19:27	1029
PCB-1232	ND	ug/L	0.50	1	09/22/16	09/22/16 19:27	1029
PCB-1242	ND	ug/L	0.50	1	09/22/16	09/22/16 19:27	1029
PCB-1248	ND	ug/L	0.50	1	09/22/16	09/22/16 19:27	1029
PCB-1254	ND	ug/L	0.50	1	09/22/16	09/22/16 19:27	1029
PCB-1260	ND	ug/L	0.50	1	09/22/16	09/22/16 19:27	1029
Chlorinated Herbicides	Analytica	l Method:	SW-846 8151	А	Preparation Meth	nod: 8151A	
	Result	Units	RL	Flag Dil	Prepared	Analyzed	Analyst
Dalapon	ND	ug/L	4.6	10	09/26/16	09/28/16 00:13	1029
Dicamba	ND	ug/L	0.19	10	09/26/16	09/28/16 00:13	1029
MCPP	710	ug/L	190	10	09/26/16	09/28/16 00:13	1029
MCPA	ND	ug/L	190	10	09/26/16	09/28/16 00:13	1029
Dichloroprop	ND	ug/L	1.9	10	09/26/16	09/28/16 00:13	1029
2,4-D	ND	ua/l	1.9	10	09/26/16	09/28/16 00:13	1029
	ND	ug/L					
2,4,5-TP (Silvex)	ND	ug/L	0.19	10	09/26/16	09/28/16 00:13	1029
2,4,5-TP (Silvex) 2,4,5-T		-	0.19 0.19	10 10	09/26/16 09/26/16	09/28/16 00:13 09/28/16 00:13	
	ND	ug/L					1029

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16092115

Icor Ltd., Middleburg, VA

September 29, 2016

Sample ID: M1Hpt-15 Matrix: GROUND WATER			e Sampled: e Received:			-	e ID: 1609211	5-004
TCL Volatile Organic Compounds			SW-846 8260			Preparation Met	nod: 5030B	
_	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acetone	ND	ug/L	10		1	09/23/16	09/23/16 20:57	7 1011
Benzene	9.9	ug/L	1.0		1	09/23/16	09/23/16 20:57	7 1011
Bromochloromethane	ND	ug/L	1.0		1	09/23/16	09/23/16 20:57	7 1011
Bromodichloromethane	ND	ug/L	1.0		1	09/23/16	09/23/16 20:57	7 1011
Bromoform	ND	ug/L	5.0		1	09/23/16	09/23/16 20:57	7 1011
Bromomethane	ND	ug/L	1.0		1	09/23/16	09/23/16 20:57	7 1011
2-Butanone (MEK)	ND	ug/L	10		1	09/23/16	09/23/16 20:57	7 1011
Carbon Disulfide	ND	ug/L	10		1	09/23/16	09/23/16 20:57	7 1011
Carbon Tetrachloride	ND	ug/L	1.0		1	09/23/16	09/23/16 20:57	7 1011
Chlorobenzene	ND	ug/L	1.0		1	09/23/16	09/23/16 20:57	7 1011
Chloroethane	ND	ug/L	1.0		1	09/23/16	09/23/16 20:57	7 1011
Chloroform	7.7	ug/L	1.0		1	09/23/16	09/23/16 20:57	7 1011
Chloromethane	ND	ug/L	1.0		1	09/23/16	09/23/16 20:57	7 1011
Cyclohexane	ND	ug/L	10		1	09/23/16	09/23/16 20:57	7 1011
1,2-Dibromo-3-Chloropropane	ND	ug/L	10		1	09/23/16	09/23/16 20:57	7 1011
Dibromochloromethane	ND	ug/L	1.0		1	09/23/16	09/23/16 20:57	7 1011
1,2-Dibromoethane (EDB)	ND	ug/L	1.0		1	09/23/16	09/23/16 20:57	7 1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	09/23/16	09/23/16 20:57	7 1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	09/23/16	09/23/16 20:57	7 1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	09/23/16	09/23/16 20:57	7 1011
Dichlorodifluoromethane	ND	ug/L	1.0		1	09/23/16	09/23/16 20:57	7 1011
1,1-Dichloroethane	ND	ug/L	1.0		1	09/23/16	09/23/16 20:57	7 1011
1,2-Dichloroethane	ND	ug/L	1.0		1	09/23/16	09/23/16 20:57	7 1011
1,1-Dichloroethene	ND	ug/L	1.0		1	09/23/16	09/23/16 20:57	7 1011
cis-1,2-Dichloroethene	ND	ug/L	1.0		1	09/23/16	09/23/16 20:57	7 1011
1,2-Dichloropropane	ND	ug/L	1.0		1	09/23/16	09/23/16 20:57	7 1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	09/23/16	09/23/16 20:57	7 1011
trans-1,3-Dichloropropene	ND	ug/L	1.0		1	09/23/16	09/23/16 20:57	7 1011
trans-1,2-Dichloroethene	ND	ug/L	1.0		1	09/23/16	09/23/16 20:57	7 1011
Ethylbenzene	ND	ug/L	1.0		1	09/23/16	09/23/16 20:57	7 1011

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16092115

Icor Ltd., Middleburg, VA

September 29, 2016

Sample ID: M1Hpt-15			ne Sampled:			PSS Sample	e ID: 1609211	5-004
Matrix: GROUND WATER		Date/Tim	e Received:	09/21/2016 1	4:45			
TCL Volatile Organic Compounds	Analytica	l Method:	SW-846 8260	В	Pre	eparation Meth	nod: 5030B	
_	Result	Units	RL	Flag Dil		Prepared	Analyzed	Analyst
2-Hexanone	ND	ug/L	10	1		09/23/16	09/23/16 20:57	1011
Isopropylbenzene	ND	ug/L	1.0	1		09/23/16	09/23/16 20:57	1011
Methyl Acetate	ND	ug/L	10	1		09/23/16	09/23/16 20:57	1011
Methylcyclohexane	ND	ug/L	10	1		09/23/16	09/23/16 20:57	1011
Methylene Chloride	ND	ug/L	1.0	1		09/23/16	09/23/16 20:57	1011
4-Methyl-2-Pentanone	ND	ug/L	5.0	1		09/23/16	09/23/16 20:57	1011
Methyl-t-butyl ether	ND	ug/L	1.0	1		09/23/16	09/23/16 20:57	1011
Naphthalene	ND	ug/L	1.0	1		09/23/16	09/23/16 20:57	1011
Styrene	ND	ug/L	1.0	1		09/23/16	09/23/16 20:57	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		09/23/16	09/23/16 20:57	1011
Tetrachloroethene	ND	ug/L	1.0	1		09/23/16	09/23/16 20:57	1011
Toluene	ND	ug/L	1.0	1		09/23/16	09/23/16 20:57	1011
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		09/23/16	09/23/16 20:57	1011
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		09/23/16	09/23/16 20:57	1011
1,1,1-Trichloroethane	ND	ug/L	1.0	1		09/23/16	09/23/16 20:57	1011
Trichloroethene	ND	ug/L	1.0	1		09/23/16	09/23/16 20:57	1011
1,1,2-Trichloroethane	ND	ug/L	1.0	1		09/23/16	09/23/16 20:57	1011
Trichlorofluoromethane	ND	ug/L	5.0	1		09/23/16	09/23/16 20:57	1011
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	ug/L	1.0	1		09/23/16	09/23/16 20:57	1011
Vinyl Chloride	ND	ug/L	1.0	1		09/23/16	09/23/16 20:57	1011
m,p-Xylenes	ND	ug/L	2.0	1		09/23/16	09/23/16 20:57	1011
o-Xylene	ND	ug/L	1.0	1		09/23/16	09/23/16 20:57	1011

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16092115

Icor Ltd., Middleburg, VA

September 29, 2016

Sample ID: M1Hpt-15 Matrix: GROUND WATER		Date/Time Date/Time l	-			PSS Sample	e ID: 16092115	5-004
TCL Semivolatile Organic Compounds		I Method: S\				Preparation Meth	nod: 3510C	
	Result	Units	RL	Flag Di	I	Prepared	Analyzed	Analyst
Acenaphthene	ND	ug/L	5.0	_	1	09/21/16	09/23/16 17:32	1055
Acenaphthylene	ND	ug/L	5.0		1	09/21/16	09/23/16 17:32	1055
Acetophenone	ND	ug/L	5.0		1	09/21/16	09/23/16 17:32	1055
Anthracene	ND	ug/L	5.0		1	09/21/16	09/23/16 17:32	1055
Atrazine	ND	ug/L	5.0		1	09/21/16	09/23/16 17:32	1055
Benzo(a)anthracene	ND	ug/L	5.0		1	09/21/16	09/23/16 17:32	1055
Benzo(a)pyrene	ND	ug/L	5.0		1	09/21/16	09/23/16 17:32	1055
Benzo(b)fluoranthene	ND	ug/L	5.0		1	09/21/16	09/23/16 17:32	1055
Benzo(g,h,i)perylene	ND	ug/L	5.0		1	09/21/16	09/23/16 17:32	1055
Benzo(k)fluoranthene	ND	ug/L	5.0		1	09/21/16	09/23/16 17:32	1055
Biphenyl (Diphenyl)	ND	ug/L	5.0		1	09/21/16	09/23/16 17:32	1055
Butyl benzyl phthalate	ND	ug/L	5.0		1	09/21/16	09/23/16 17:32	1055
bis(2-chloroethoxy) methane	ND	ug/L	5.0		1	09/21/16	09/23/16 17:32	1055
bis(2-chloroethyl) ether	ND	ug/L	5.0		1	09/21/16	09/23/16 17:32	1055
bis(2-chloroisopropyl) ether	ND	ug/L	5.0		1	09/21/16	09/23/16 17:32	1055
bis(2-ethylhexyl) phthalate	ND	ug/L	5.0		1	09/21/16	09/23/16 17:32	1055
4-Bromophenylphenyl ether	ND	ug/L	5.0		1	09/21/16	09/23/16 17:32	1055
Di-n-butyl phthalate	ND	ug/L	5.0		1	09/21/16	09/23/16 17:32	1055
Carbazole	ND	ug/L	5.0		1	09/21/16	09/23/16 17:32	1055
Caprolactam	ND	ug/L	5.0		1	09/21/16	09/23/16 17:32	1055
4-Chloro-3-methyl phenol	ND	ug/L	5.0		1	09/21/16	09/23/16 17:32	1055
4-Chloroaniline	ND	ug/L	5.0		1	09/21/16	09/23/16 17:32	1055
2-Chloronaphthalene	ND	ug/L	5.0		1	09/21/16	09/23/16 17:32	1055
2-Chlorophenol	ND	ug/L	5.0		1	09/21/16	09/23/16 17:32	1055
4-Chlorophenyl Phenyl ether	ND	ug/L	5.0		1	09/21/16	09/23/16 17:32	1055
Chrysene	ND	ug/L	5.0		1	09/21/16	09/23/16 17:32	1055
Dibenz(a,h)Anthracene	ND	ug/L	5.0		1	09/21/16	09/23/16 17:32	1055
Dibenzofuran	ND	ug/L	5.0		1	09/21/16	09/23/16 17:32	1055
3,3-Dichlorobenzidine	ND	ug/L	5.0		1	09/21/16	09/23/16 17:32	1055
2,4-Dichlorophenol	ND	ug/L	5.0		1	09/21/16	09/23/16 17:32	1055

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

Date/Time Sampled: 09/21/2016 11:45 PSS Sample ID: 16092115-004

No: 16092115

Icor Ltd., Middleburg, VA

September 29, 2016

Project Name: Robinson Terminal North Project Location: 500/501 N. Union St.

Sample ID: M1Hpt-15

Di-n-octyl phthalate

Pentachlorophenol

Phenanthrene

Matrix: GROUND WATER		Date/Time	Received:	09/21/2016 14	1:45		
TCL Semivolatile Organic Compounds	Analytica	l Method: \$	SW-846 8270	С	Preparation Met	nod: 3510C	
	Result	Units	RL	Flag Dil	Prepared	Analyzed	Analyst
Diethyl phthalate	ND	ug/L	5.0	1	09/21/16	09/23/16 17:32	2 1055
Dimethyl phthalate	ND	ug/L	5.0	1	09/21/16	09/23/16 17:32	2 1055
2,4-Dimethylphenol	ND	ug/L	5.0	1	09/21/16	09/23/16 17:32	2 1055
4,6-Dinitro-2-methyl phenol	ND	ug/L	5.0	1	09/21/16	09/23/16 17:32	2 1055
2,4-Dinitrophenol	ND	ug/L	10	1	09/21/16	09/23/16 17:32	2 1055
2,4-Dinitrotoluene	ND	ug/L	5.0	1	09/21/16	09/23/16 17:32	2 1055
2,6-Dinitrotoluene	ND	ug/L	5.0	1	09/21/16	09/23/16 17:32	2 1055
Fluoranthene	ND	ug/L	5.0	1	09/21/16	09/23/16 17:32	2 1055
Fluorene	ND	ug/L	5.0	1	09/21/16	09/23/16 17:32	2 1055
Hexachlorobenzene	ND	ug/L	5.0	1	09/21/16	09/23/16 17:32	2 1055
Hexachlorobutadiene	ND	ug/L	5.0	1	09/21/16	09/23/16 17:32	2 1055
Hexachlorocyclopentadiene	ND	ug/L	5.0	1	09/21/16	09/23/16 17:32	2 1055
Hexachloroethane	ND	ug/L	5.0	1	09/21/16	09/23/16 17:32	2 1055
Indeno(1,2,3-c,d)Pyrene	ND	ug/L	5.0	1	09/21/16	09/23/16 17:32	2 1055
Isophorone	ND	ug/L	5.0	1	09/21/16	09/23/16 17:32	2 1055
2-Methylnaphthalene	ND	ug/L	5.0	1	09/21/16	09/23/16 17:32	2 1055
2-Methyl phenol	ND	ug/L	5.0	1	09/21/16	09/23/16 17:32	2 1055
3&4-Methylphenol	ND	ug/L	5.0	1	09/21/16	09/23/16 17:32	2 1055
Naphthalene	ND	ug/L	5.0	1	09/21/16	09/23/16 17:32	2 1055
2-Nitroaniline	ND	ug/L	5.0	1	09/21/16	09/23/16 17:32	2 1055
3-Nitroaniline	ND	ug/L	5.0	1	09/21/16	09/23/16 17:32	2 1055
4-Nitroaniline	ND	ug/L	5.0	1	09/21/16	09/23/16 17:32	2 1055
Nitrobenzene	ND	ug/L	5.0	1	09/21/16	09/23/16 17:32	2 1055
2-Nitrophenol	ND	ug/L	5.0	1	09/21/16	09/23/16 17:32	2 1055
4-Nitrophenol	ND	ug/L	5.0	1	09/21/16	09/23/16 17:32	2 1055
N-Nitrosodi-n-propyl amine	ND	ug/L	5.0	1	09/21/16	09/23/16 17:32	2 1055
N-Nitrosodiphenylamine	ND	ug/L	5.0	1	09/21/16	09/23/16 17:32	2 1055

5.0

5.0

5.0

ND

ND

ND

ug/L

ug/L

ug/L

09/21/16 09/23/16 17:32 1055

09/21/16 09/23/16 17:32 1055

09/21/16 09/23/16 17:32 1055

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PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16092115

Icor Ltd., Middleburg, VA

September 29, 2016

Sample ID: M1Hpt-15 Matrix: GROUND WATER			Sampled: 09/2 ² Received: ^{09/2}		·	e ID: 1609211	5-004	
TCL Semivolatile Organic Compounds	Analytica	Analytical Method: SW-846 8270 C Preparation Method: 3510C						
	Result	Units	RL Flag	Dil	Prepared	Analyzed	Analyst	
Phenol	ND	ug/L	5.0	1	09/21/16	09/23/16 17:3	2 1055	
Pyrene	ND	ug/L	5.0	1	09/21/16	09/23/16 17:3	2 1055	
Pyridine	ND	ug/L	5.0	1	09/21/16	09/23/16 17:3	2 1055	
2,4,5-Trichlorophenol	ND	ug/L	5.0	1	09/21/16	09/23/16 17:3	2 1055	
2,4,6-Trichlorophenol	ND	ug/L	5.0	1	09/21/16	09/23/16 17:3	2 1055	

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16092115

Icor Ltd., Middleburg, VA

September 29, 2016

Sample ID: M1Hpt-08 Matrix: GROUND WATER			me Sampled: ne Received:			PSS Sample	e ID: 1609211	5-005	
PP Metals	Analytica	Method:	: SW-846 6020	Α	F	Preparation Method: 3010A			
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst	
Antimony	ND	ug/L	5.0		1	09/22/16	09/23/16 00:41	1033	
Arsenic	6.3	ug/L	1.0		1	09/22/16	09/23/16 15:29	1033	
Beryllium	ND	ug/L	1.0		1	09/22/16	09/23/16 15:29	1033	
Cadmium	ND	ug/L	1.0		1	09/22/16	09/23/16 00:41	1033	
Chromium	ND	ug/L	1.0		1	09/22/16	09/23/16 00:41	1033	
Copper	5.8	ug/L	1.0		1	09/22/16	09/23/16 15:29	1033	
Lead	24	ug/L	1.0		1	09/22/16	09/23/16 15:29	1033	
Mercury	ND	ug/L	0.20		1	09/22/16	09/23/16 15:29	1033	
Nickel	1.1	ug/L	1.0		1	09/22/16	09/23/16 00:41	1033	
Selenium	ND	ug/L	1.0		1	09/22/16	09/23/16 00:41	1033	
Silver	ND	ug/L	1.0		1	09/22/16	09/23/16 00:41	1033	
Thallium	ND	ug/L	1.0		1	09/22/16	09/23/16 00:41	1033	
Zinc	21	ug/L	20		1	09/22/16	09/23/16 15:29	1033	
Total Petroleum Hydrocarbons - DRO	Analytica	l Method:	: SW-846 8015	С	F	Preparation Meth	nod: 3510C		
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst	
TPH-DRO (Diesel Range Organics)	0.15	mg/L	0.10		1	09/23/16	09/26/16 00:07	1045	
Total Petroleum Hydrocarbons-GRO	Analytica	Method:	: SW-846 8015	С	F	Preparation Meth	nod: 5030B		
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst	
TPH-GRO (Gasoline Range Organics)	ND	ug/L	100		1	09/22/16	09/22/16 14:08	1035	

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16092115

Icor Ltd., Middleburg, VA

September 29, 2016

Sample ID: M1Hpt-08	Date/Time Sampled: 09/21/2016 09:45	PSS Sample ID: 16092115-005
Matrix: GROUND WATER	Date/Time Received: 09/21/2016 14:45	

Organochlorine Pesticides	Analytica	Method:	SW-846 8081	В	Preparation Meth	Preparation Method: 3510C		
	Result	Units	RL	Flag Dil	Prepared	Analyzed	Analyst	
alpha-BHC	ND	ug/L	0.40	10	09/22/16	09/26/16 15:07	1029	
gamma-BHC (Lindane)	ND	ug/L	0.40	10	09/22/16	09/26/16 15:07	1029	
beta-BHC	ND	ug/L	0.40	10	09/22/16	09/26/16 15:07	1029	
delta-BHC	ND	ug/L	0.40	10	09/22/16	09/26/16 15:07	1029	
Heptachlor	ND	ug/L	0.40	10	09/22/16	09/26/16 15:07	1029	
Aldrin	ND	ug/L	0.40	10	09/22/16	09/26/16 15:07	1029	
Heptachlor epoxide	ND	ug/L	0.40	10	09/22/16	09/26/16 15:07	1029	
gamma-Chlordane	ND	ug/L	0.40	10	09/22/16	09/26/16 15:07	1029	
alpha-Chlordane	ND	ug/L	0.40	10	09/22/16	09/26/16 15:07	1029	
4,4-DDE	ND	ug/L	0.40	10	09/22/16	09/26/16 15:07	1029	
Endosulfan I	ND	ug/L	0.40	10	09/22/16	09/26/16 15:07	1029	
Dieldrin	ND	ug/L	0.40	10	09/22/16	09/26/16 15:07	1029	
Endrin	ND	ug/L	0.40	10	09/22/16	09/26/16 15:07	1029	
4,4-DDD	ND	ug/L	0.40	10	09/22/16	09/26/16 15:07	1029	
Endosulfan II	ND	ug/L	0.40	10	09/22/16	09/26/16 15:07	1029	
4,4-DDT	ND	ug/L	0.40	10	09/22/16	09/26/16 15:07	1029	
Endrin aldehyde	ND	ug/L	0.40	10	09/22/16	09/26/16 15:07	1029	
Methoxychlor	ND	ug/L	0.40	10	09/22/16	09/26/16 15:07	1029	
Endosulfan sulfate	ND	ug/L	0.40	10	09/22/16	09/26/16 15:07	1029	
Endrin ketone	ND	ug/L	0.40	10	09/22/16	09/26/16 15:07	1029	
Toxaphene	ND	ug/L	10	10	09/22/16	09/26/16 15:07	1029	
Chlordane	ND	ug/L	10	10	09/22/16	09/26/16 15:07	1029	

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16092115

Icor Ltd., Middleburg, VA

September 29, 2016

Sample ID: M1Hpt-08			ne Sampled:			•	e ID: 16092115	5-005
Matrix: GROUND WATER		Date/Tim	e Received:	09/21/2010	3 14:45			
Polychlorinated Biphenyls	Analytica	I Method:	SW-846 8082	Α		Preparation Meth		
				D::		Clean up Method		
	Result	Units	RL			Prepared		Analyst
PCB-1016	ND	ug/L	0.50		1	09/22/16	09/22/16 16:33	
PCB-1221	ND	ug/L	0.50		1	09/22/16	09/22/16 16:33	1029
PCB-1232	ND	ug/L	0.50		1	09/22/16	09/22/16 16:33	1029
PCB-1242	ND	ug/L	0.50		1	09/22/16	09/22/16 16:33	1029
PCB-1248	ND	ug/L	0.50		1	09/22/16	09/22/16 16:33	1029
PCB-1254	ND	ug/L	0.50		1	09/22/16	09/22/16 16:33	1029
PCB-1260	ND	ug/L	0.50		1	09/22/16	09/22/16 16:33	1029
	Analytical Method: SW-846 8151 A Preparation Method: 8151A							
Chlorinated Herbicides	Analytica	l Method:	SW-846 8151	Α		Preparation Meth	nod: 8151A	
Chlorinated Herbicides	•					Preparation Meth	nod: 8151A	
Chlorinated Herbicides	Analytica Result	l Method: Units		A Flag Dil		Preparation Meth		Analyst
Chlorinated Herbicides Dalapon	•					·		
	Result	Units	RL	Flag Dil	0	Prepared	Analyzed	1029
Dalapon	Result ND	Units ug/L	RL 46	Flag Dil	0	Prepared 09/26/16	Analyzed 09/28/16 01:52	1029 1029
Dalapon Dicamba	Result ND ND	Units ug/L ug/L	RL 46 1.9	Flag Dil 10	0	Prepared 09/26/16 09/26/16	Analyzed 09/28/16 01:52 09/28/16 01:52	1029 1029 1029
Dalapon Dicamba MCPP	Result ND ND ND	Units ug/L ug/L ug/L	RL 46 1.9 1,900	Flag Dil 10 10 10	0 0 0 0	Prepared 09/26/16 09/26/16 09/26/16	Analyzed 09/28/16 01:52 09/28/16 01:52 09/28/16 01:52	1029 1029 1029 1029
Dalapon Dicamba MCPP MCPA	Result ND ND ND ND ND	Units ug/L ug/L ug/L ug/L	RL 46 1.9 1,900 1,900	Flag Dil 10 10 10	000000000000000000000000000000000000000	Prepared 09/26/16 09/26/16 09/26/16 09/26/16	Analyzed 09/28/16 01:52 09/28/16 01:52 09/28/16 01:52	1029 1029 1029 1029 1029
Dalapon Dicamba MCPP MCPA Dichloroprop	Result ND ND ND ND ND ND ND	Units ug/L ug/L ug/L ug/L ug/L	RL 46 1.9 1,900 1,900 19	Flag Dil 10 10 10 10 10	0 0 0 0 0	Prepared 09/26/16 09/26/16 09/26/16 09/26/16	Analyzed 09/28/16 01:52 09/28/16 01:52 09/28/16 01:52 09/28/16 01:52 09/28/16 01:52	1029 1029 1029 1029 1029 1029
Dalapon Dicamba MCPP MCPA Dichloroprop 2,4-D	Result ND ND ND ND ND ND ND ND ND N	Units ug/L ug/L ug/L ug/L ug/L ug/L	RL 46 1.9 1,900 1,900 19	Flag Dil 10 10 10 10 10 10	0 0 0 0 0 0	Prepared 09/26/16 09/26/16 09/26/16 09/26/16 09/26/16	Analyzed 09/28/16 01:52 09/28/16 01:52 09/28/16 01:52 09/28/16 01:52 09/28/16 01:52	1029 1029 1029 1029 1029 1029 1029
Dalapon Dicamba MCPP MCPA Dichloroprop 2,4-D 2,4,5-TP (Silvex)	Result ND ND ND ND ND ND ND ND ND N	Units ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	RL 46 1.9 1,900 1,900 19 19	Flag Dil 10 10 10 10 10 10 10 10 10	0 0 0 0 0 0 0	Prepared 09/26/16 09/26/16 09/26/16 09/26/16 09/26/16 09/26/16	Analyzed 09/28/16 01:52 09/28/16 01:52 09/28/16 01:52 09/28/16 01:52 09/28/16 01:52 09/28/16 01:52	1029 1029 1029 1029 1029 1029 1029 1029

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16092115

Icor Ltd., Middleburg, VA

September 29, 2016

Sample ID: M1Hpt-08 Matrix: GROUND WATER		Date/Time Date/Time l	-			PSS Sampl	e ID: 1609211	5-005
TCL Volatile Organic Compounds		l Method: S\				Preparation Metl	nod: 5030B	
_	Result	Units	RL	Flag l	Dil	Prepared	Analyzed	Analyst
Acetone	ND	ug/L	10		1	09/27/16	09/27/16 15:49	1011
Benzene	ND	ug/L	1.0		1	09/27/16	09/27/16 15:49	1011
Bromochloromethane	ND	ug/L	1.0		1	09/27/16	09/27/16 15:49	1011
Bromodichloromethane	ND	ug/L	1.0		1	09/27/16	09/27/16 15:49	1011
Bromoform	ND	ug/L	5.0		1	09/27/16	09/27/16 15:49	1011
Bromomethane	ND	ug/L	1.0		1	09/27/16	09/27/16 15:49	1011
2-Butanone (MEK)	ND	ug/L	10		1	09/27/16	09/27/16 15:49	1011
Carbon Disulfide	ND	ug/L	10		1	09/27/16	09/27/16 15:49	1011
Carbon Tetrachloride	ND	ug/L	1.0		1	09/27/16	09/27/16 15:49	1011
Chlorobenzene	ND	ug/L	1.0		1	09/27/16	09/27/16 15:49	1011
Chloroethane	ND	ug/L	1.0		1	09/27/16	09/27/16 15:49	1011
Chloroform	ND	ug/L	1.0		1	09/27/16	09/27/16 15:49	1011
Chloromethane	ND	ug/L	1.0		1	09/27/16	09/27/16 15:49	1011
Cyclohexane	ND	ug/L	10		1	09/27/16	09/27/16 15:49	1011
1,2-Dibromo-3-Chloropropane	ND	ug/L	10		1	09/27/16	09/27/16 15:49	1011
Dibromochloromethane	ND	ug/L	1.0		1	09/27/16	09/27/16 15:49	1011
1,2-Dibromoethane (EDB)	ND	ug/L	1.0		1	09/27/16	09/27/16 15:49	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	09/27/16	09/27/16 15:49	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	09/27/16	09/27/16 15:49	1011
Dichlorodifluoromethane	ND	ug/L	1.0		1	09/27/16	09/27/16 15:49	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	09/27/16	09/27/16 15:49	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	09/27/16	09/27/16 15:49	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	09/27/16	09/27/16 15:49	1011
cis-1,2-Dichloroethene	ND	ug/L	1.0		1	09/27/16	09/27/16 15:49	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	09/27/16	09/27/16 15:49	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	09/27/16	09/27/16 15:49	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	09/27/16	09/27/16 15:49	1011
trans-1,3-Dichloropropene	ND	ug/L	1.0		1	09/27/16	09/27/16 15:49	1011
trans-1,2-Dichloroethene	ND	ug/L	1.0		1	09/27/16	09/27/16 15:49	1011
Ethylbenzene	ND	ug/L	1.0		1	09/27/16	09/27/16 15:49	1011

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16092115

Icor Ltd., Middleburg, VA

September 29, 2016

Project Name: Robinson Terminal North Project Location: 500/501 N. Union St.

o-Xylene

Sample ID: M1Hpt-08			e Sampled:			PSS Sample	e ID: 1609211	5-005
Matrix: GROUND WATER	[Date/Time	Received:	09/21/2016	14:45			
TCL Volatile Organic Compounds	Analytica	l Method: 9	SW-846 8260	В	F	Preparation Meth	nod: 5030B	
_	Result	Units	RL	Flag Dil		Prepared	Analyzed	Analyst
2-Hexanone	ND	ug/L	10	1		09/27/16	09/27/16 15:49	1011
Isopropylbenzene	ND	ug/L	1.0	1		09/27/16	09/27/16 15:49	1011
Methyl Acetate	ND	ug/L	10	1		09/27/16	09/27/16 15:49	1011
Methylcyclohexane	ND	ug/L	10	1		09/27/16	09/27/16 15:49	1011
Methylene Chloride	ND	ug/L	1.0	1		09/27/16	09/27/16 15:49	1011
4-Methyl-2-Pentanone	ND	ug/L	5.0	1		09/27/16	09/27/16 15:49	1011
Methyl-t-butyl ether	ND	ug/L	1.0	1		09/27/16	09/27/16 15:49	1011
Naphthalene	14	ug/L	1.0	1		09/27/16	09/27/16 15:49	1011
Styrene	ND	ug/L	1.0	1		09/27/16	09/27/16 15:49	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		09/27/16	09/27/16 15:49	1011
Tetrachloroethene	ND	ug/L	1.0	1		09/27/16	09/27/16 15:49	1011
Toluene	ND	ug/L	1.0	1		09/27/16	09/27/16 15:49	1011
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		09/27/16	09/27/16 15:49	1011
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		09/27/16	09/27/16 15:49	1011
1,1,1-Trichloroethane	ND	ug/L	1.0	1		09/27/16	09/27/16 15:49	1011
Trichloroethene	ND	ug/L	1.0	1		09/27/16	09/27/16 15:49	1011
1,1,2-Trichloroethane	ND	ug/L	1.0	1		09/27/16	09/27/16 15:49	1011
Trichlorofluoromethane	ND	ug/L	5.0	1		09/27/16	09/27/16 15:49	1011
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	ug/L	1.0	1		09/27/16	09/27/16 15:49	1011
Vinyl Chloride	ND	ug/L	1.0	1		09/27/16	09/27/16 15:49	1011
m,p-Xylenes	ND	ug/L	2.0	1		09/27/16	09/27/16 15:49	1011

1.0

ND

ug/L

1

09/27/16 09/27/16 15:49 1011

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16092115

Icor Ltd., Middleburg, VA

September 29, 2016

Sample ID: M1Hpt-08 Matrix: GROUND WATER			e Sampled: e Received:			<u>-</u>	e ID: 1609211	5-005
TCL Semivolatile Organic Compounds			SW-846 8270			Preparation Met	nod: 3510C	
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acenaphthene	ND	ug/L	5.3		1	09/21/16	09/23/16 17:59	1055
Acenaphthylene	ND	ug/L	5.3		1	09/21/16	09/23/16 17:59	1055
Acetophenone	ND	ug/L	5.3		1	09/21/16	09/23/16 17:59	1055
Anthracene	ND	ug/L	5.3		1	09/21/16	09/23/16 17:59	1055
Atrazine	ND	ug/L	5.3		1	09/21/16	09/23/16 17:59	1055
Benzo(a)anthracene	ND	ug/L	5.3		1	09/21/16	09/23/16 17:59	1055
Benzo(a)pyrene	ND	ug/L	5.3		1	09/21/16	09/23/16 17:59	1055
Benzo(b)fluoranthene	ND	ug/L	5.3		1	09/21/16	09/23/16 17:59	1055
Benzo(g,h,i)perylene	ND	ug/L	5.3		1	09/21/16	09/23/16 17:59	1055
Benzo(k)fluoranthene	ND	ug/L	5.3		1	09/21/16	09/23/16 17:59	1055
Biphenyl (Diphenyl)	ND	ug/L	5.3		1	09/21/16	09/23/16 17:59	1055
Butyl benzyl phthalate	ND	ug/L	5.3		1	09/21/16	09/23/16 17:59	1055
bis(2-chloroethoxy) methane	ND	ug/L	5.3		1	09/21/16	09/23/16 17:59	1055
bis(2-chloroethyl) ether	ND	ug/L	5.3		1	09/21/16	09/23/16 17:59	1055
bis(2-chloroisopropyl) ether	ND	ug/L	5.3		1	09/21/16	09/23/16 17:59	1055
bis(2-ethylhexyl) phthalate	ND	ug/L	5.3		1	09/21/16	09/23/16 17:59	1055
4-Bromophenylphenyl ether	ND	ug/L	5.3		1	09/21/16	09/23/16 17:59	1055
Di-n-butyl phthalate	ND	ug/L	5.3		1	09/21/16	09/23/16 17:59	1055
Carbazole	ND	ug/L	5.3		1	09/21/16	09/23/16 17:59	1055
Caprolactam	ND	ug/L	5.3		1	09/21/16	09/23/16 17:59	1055
4-Chloro-3-methyl phenol	ND	ug/L	5.3		1	09/21/16	09/23/16 17:59	1055
4-Chloroaniline	ND	ug/L	5.3		1	09/21/16	09/23/16 17:59	1055
2-Chloronaphthalene	ND	ug/L	5.3		1	09/21/16	09/23/16 17:59	1055
2-Chlorophenol	ND	ug/L	5.3		1	09/21/16	09/23/16 17:59	1055
4-Chlorophenyl Phenyl ether	ND	ug/L	5.3		1	09/21/16	09/23/16 17:59	1055
Chrysene	ND	ug/L	5.3		1	09/21/16	09/23/16 17:59	1055
Dibenz(a,h)Anthracene	ND	ug/L	5.3		1	09/21/16	09/23/16 17:59	1055
Dibenzofuran	ND	ug/L	5.3		1	09/21/16	09/23/16 17:59	1055
3,3-Dichlorobenzidine	ND	ug/L	5.3		1	09/21/16	09/23/16 17:59	1055
2,4-Dichlorophenol	ND	ug/L	5.3		1	09/21/16	09/23/16 17:59	1055

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

Date/Time Sampled: 09/21/2016 09:45 PSS Sample ID: 16092115-005

No: 16092115

Icor Ltd., Middleburg, VA

September 29, 2016

Project Name: Robinson Terminal North Project Location: 500/501 N. Union St.

Sample ID: M1Hpt-08

Pentachlorophenol

Phenanthrene

Matrix: GROUND WATER		Date/Time	Received:	09/21/2016 14:	45		
TCL Semivolatile Organic Compounds	Analytica	l Method: S	W-846 8270 (С	Preparation Met	nod: 3510C	
	Result	Units	RL	Flag Dil	Prepared	Analyzed	Analyst
Diethyl phthalate	ND	ug/L	5.3	1	09/21/16	09/23/16 17:59	1055
Dimethyl phthalate	ND	ug/L	5.3	1	09/21/16	09/23/16 17:59	1055
2,4-Dimethylphenol	ND	ug/L	5.3	1	09/21/16	09/23/16 17:59	1055
4,6-Dinitro-2-methyl phenol	ND	ug/L	5.3	1	09/21/16	09/23/16 17:59	1055
2,4-Dinitrophenol	ND	ug/L	11	1	09/21/16	09/23/16 17:59	1055
2,4-Dinitrotoluene	ND	ug/L	5.3	1	09/21/16	09/23/16 17:59	1055
2,6-Dinitrotoluene	ND	ug/L	5.3	1	09/21/16	09/23/16 17:59	1055
Fluoranthene	ND	ug/L	5.3	1	09/21/16	09/23/16 17:59	1055
Fluorene	ND	ug/L	5.3	1	09/21/16	09/23/16 17:59	1055
Hexachlorobenzene	ND	ug/L	5.3	1	09/21/16	09/23/16 17:59	1055
Hexachlorobutadiene	ND	ug/L	5.3	1	09/21/16	09/23/16 17:59	1055
Hexachlorocyclopentadiene	ND	ug/L	5.3	1	09/21/16	09/23/16 17:59	1055
Hexachloroethane	ND	ug/L	5.3	1	09/21/16	09/23/16 17:59	1055
Indeno(1,2,3-c,d)Pyrene	ND	ug/L	5.3	1	09/21/16	09/23/16 17:59	1055
Isophorone	ND	ug/L	5.3	1	09/21/16	09/23/16 17:59	1055
2-Methylnaphthalene	ND	ug/L	5.3	1	09/21/16	09/23/16 17:59	1055
2-Methyl phenol	ND	ug/L	5.3	1	09/21/16	09/23/16 17:59	1055
3&4-Methylphenol	ND	ug/L	5.3	1	09/21/16	09/23/16 17:59	1055
Naphthalene	ND	ug/L	5.3	1	09/21/16	09/23/16 17:59	1055
2-Nitroaniline	ND	ug/L	5.3	1	09/21/16	09/23/16 17:59	1055
3-Nitroaniline	ND	ug/L	5.3	1	09/21/16	09/23/16 17:59	1055
4-Nitroaniline	ND	ug/L	5.3	1	09/21/16	09/23/16 17:59	1055
Nitrobenzene	ND	ug/L	5.3	1	09/21/16	09/23/16 17:59	1055
2-Nitrophenol	ND	ug/L	5.3	1	09/21/16	09/23/16 17:59	1055
4-Nitrophenol	ND	ug/L	5.3	1	09/21/16	09/23/16 17:59	1055
N-Nitrosodi-n-propyl amine	ND	ug/L	5.3	1	09/21/16	09/23/16 17:59	1055
N-Nitrosodiphenylamine	ND	ug/L	5.3	1	09/21/16	09/23/16 17:59	1055
Di-n-octyl phthalate	ND	ug/L	5.3	1	09/21/16	09/23/16 17:59	1055

5.3

5.3

1

ND

ND

ug/L

ug/L

09/21/16 09/23/16 17:59 1055

09/21/16 09/23/16 17:59 1055

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16092115

Icor Ltd., Middleburg, VA

September 29, 2016

Sample ID: M1Hpt-08 Matrix: GROUND WATER			e Sampled: Received:			le ID: 1609211	5-005
TCL Semivolatile Organic Compounds	Analytica	Method: S	SW-846 8270	С	Preparation Me	thod: 3510C	
_	Result	Units	RL	Flag Dil	Prepared	l Analyzed	Analyst
Phenol	ND	ug/L	5.3	•	1 09/21/16	6 09/23/16 17:5	9 1055
Pyrene	ND	ug/L	5.3	•	1 09/21/16	6 09/23/16 17:5	9 1055
Pyridine	ND	ug/L	5.3	•	1 09/21/16	6 09/23/16 17:5	9 1055
2,4,5-Trichlorophenol	ND	ug/L	5.3	•	1 09/21/16	6 09/23/16 17:5	9 1055
2,4,6-Trichlorophenol	ND	ug/L	5.3	•	1 09/21/16	6 09/23/16 17:5	9 1055

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16092115

Icor Ltd., Middleburg, VA

September 29, 2016

Sample ID: M1Hpt-07 Matrix: GROUND WATER			ne Sampled: ne Received:			PSS Sampl	e ID: 1609211	5-006
PP Metals	Analytica	l Method:	SW-846 6020	Α	F	Preparation Meth	nod: 3010A	
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Antimony	ND	ug/L	5.0		1	09/22/16	09/23/16 00:47	1033
Arsenic	7.5	ug/L	1.0		1	09/22/16	09/23/16 15:36	1033
Beryllium	ND	ug/L	1.0		1	09/22/16	09/23/16 15:36	1033
Cadmium	ND	ug/L	1.0		1	09/22/16	09/23/16 00:47	1033
Chromium	ND	ug/L	1.0		1	09/22/16	09/23/16 00:47	1033
Copper	5.6	ug/L	1.0		1	09/22/16	09/23/16 15:36	1033
Lead	1.6	ug/L	1.0		1	09/22/16	09/23/16 15:36	1033
Mercury	ND	ug/L	0.20		1	09/22/16	09/23/16 15:36	1033
Nickel	ND	ug/L	1.0		1	09/22/16	09/23/16 00:47	1033
Selenium	ND	ug/L	1.0		1	09/22/16	09/23/16 00:47	1033
Silver	ND	ug/L	1.0		1	09/22/16	09/23/16 00:47	1033
Thallium	ND	ug/L	1.0		1	09/22/16	09/23/16 00:47	1033
Zinc	69	ug/L	20		1	09/22/16	09/23/16 15:36	1033
Total Petroleum Hydrocarbons - DRO	Analytica	l Method:	SW-846 8015	С	F	Preparation Meth	nod: 3510C	
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-DRO (Diesel Range Organics)	2.0	mg/L	0.10		1	09/23/16	09/26/16 00:07	1045
Total Petroleum Hydrocarbons-GRO	Analytica	l Method:	SW-846 8015	С	F	Preparation Meth	nod: 5030B	
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-GRO (Gasoline Range Organics)	880	ug/L	100		1	09/22/16	09/22/16 14:33	1035

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16092115

Icor Ltd., Middleburg, VA

September 29, 2016

Sample ID: M1Hpt-07	Date/Time Sampled: 09/21/2016 12:20	PSS Sample ID: 16092115-006
Matrix: GROUND WATER	Date/Time Received: 09/21/2016 14:45	

Organochlorine Pesticides	Analytical Method: SW-846 8081 B			В	Preparation Method: 3510C			
	Result	Units	RL	Flag Dil	Prepared	Analyzed	Analyst	
alpha-BHC	ND	ug/L	0.044	1	09/22/16	09/22/16 21:39	1029	
gamma-BHC (Lindane)	ND	ug/L	0.044	1	09/22/16	09/22/16 21:39	1029	
beta-BHC	ND	ug/L	0.044	1	09/22/16	09/22/16 21:39	1029	
delta-BHC	ND	ug/L	0.044	1	09/22/16	09/22/16 21:39	1029	
Heptachlor	ND	ug/L	0.044	1	09/22/16	09/22/16 21:39	1029	
Aldrin	ND	ug/L	0.044	1	09/22/16	09/22/16 21:39	1029	
Heptachlor epoxide	ND	ug/L	0.044	1	09/22/16	09/22/16 21:39	1029	
gamma-Chlordane	ND	ug/L	0.044	1	09/22/16	09/22/16 21:39	1029	
alpha-Chlordane	ND	ug/L	0.044	1	09/22/16	09/22/16 21:39	1029	
4,4-DDE	ND	ug/L	0.044	1	09/22/16	09/22/16 21:39	1029	
Endosulfan I	ND	ug/L	0.044	1	09/22/16	09/22/16 21:39	1029	
Dieldrin	ND	ug/L	0.044	1	09/22/16	09/22/16 21:39	1029	
Endrin	ND	ug/L	0.044	1	09/22/16	09/22/16 21:39	1029	
4,4-DDD	ND	ug/L	0.044	1	09/22/16	09/22/16 21:39	1029	
Endosulfan II	ND	ug/L	0.044	1	09/22/16	09/22/16 21:39	1029	
4,4-DDT	ND	ug/L	0.044	1	09/22/16	09/22/16 21:39	1029	
Endrin aldehyde	ND	ug/L	0.044	1	09/22/16	09/22/16 21:39	1029	
Methoxychlor	ND	ug/L	0.044	1	09/22/16	09/22/16 21:39	1029	
Endosulfan sulfate	ND	ug/L	0.044	1	09/22/16	09/22/16 21:39	1029	
Endrin ketone	ND	ug/L	0.044	1	09/22/16	09/22/16 21:39	1029	
Toxaphene	ND	ug/L	1.1	1	09/22/16	09/22/16 21:39	1029	
Chlordane	ND	ug/L	1.1	1	09/22/16	09/22/16 21:39	1029	

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16092115

Icor Ltd., Middleburg, VA

September 29, 2016

Sample ID: M1Hpt-07			ne Sampled:		<u>-</u>	e ID: 16092115	5-006		
Matrix: GROUND WATER		Date/Tim	e Received:	09/21/2016	14:45				
Polychlorinated Biphenyls	Analytica	I Method:	SW-846 8082	Α	•	Preparation Method: 3510C			
				Dil	Clean up Method				
	Result	Units	RL		Prepared	-	Analyst		
PCB-1016	ND	ug/L	0.56	1	09/22/16	09/22/16 18:59			
PCB-1221	ND	ug/L	0.56	1	09/22/16	09/22/16 18:59	1029		
PCB-1232	ND	ug/L	0.56	1	09/22/16	09/22/16 18:59	1029		
PCB-1242	ND	ug/L	0.56	1	09/22/16	09/22/16 18:59	1029		
PCB-1248	ND	ug/L	0.56	1	09/22/16	09/22/16 18:59	1029		
PCB-1254	ND	ug/L	0.56	1	09/22/16	09/22/16 18:59	1029		
PCB-1260	ND	ug/L	0.56	1	09/22/16	09/22/16 18:59	1029		
				Preparation Method: 8151A					
Chlorinated Herbicides	Analytica	l Method:	SW-846 8151	Α	Preparation Meth	nod: 8151A			
Chlorinated Herbicides	Analytica Result	l Method: Units		A Flag Dil	Preparation Meth		Analyst		
Chlorinated Herbicides Dalapon	•				Prepared				
	Result	Units	RL	Flag Dil	Prepared 09/26/16	Analyzed	1029		
Dalapon	Result ND	Units ug/L	RL 4.6	Flag Dil	Prepared 09/26/16 09/26/16	Analyzed 09/27/16 15:00	1029 1029		
Dalapon Dicamba	Result ND ND	Units ug/L ug/L	RL 4.6 0.19	Flag Dil 10	Prepared 09/26/16 09/26/16 09/26/16	Analyzed 09/27/16 15:00 09/27/16 15:00	1029 1029 1029		
Dalapon Dicamba MCPP	Result ND ND ND	Units ug/L ug/L ug/L	4.6 0.19 190	Flag Dil 10 10 10	Prepared 09/26/16 09/26/16 09/26/16 09/26/16	Analyzed 09/27/16 15:00 09/27/16 15:00 09/27/16 15:00	1029 1029 1029 1029		
Dalapon Dicamba MCPP MCPA	Result ND ND ND ND ND	Units ug/L ug/L ug/L ug/L	RL 4.6 0.19 190 190	Flag Dil 10 10 10 10 10	Prepared 09/26/16 09/26/16 09/26/16 09/26/16 09/26/16	Analyzed 09/27/16 15:00 09/27/16 15:00 09/27/16 15:00 09/27/16 15:00	1029 1029 1029 1029 1029		
Dalapon Dicamba MCPP MCPA Dichloroprop	Result ND ND ND ND ND ND ND	Units ug/L ug/L ug/L ug/L ug/L	RL 4.6 0.19 190 190 1.9	Flag Dil 10 10 10 10 10 10 10	Prepared 09/26/16 09/26/16 09/26/16 09/26/16 09/26/16 09/26/16	Analyzed 09/27/16 15:00 09/27/16 15:00 09/27/16 15:00 09/27/16 15:00 09/27/16 15:00	1029 1029 1029 1029 1029 1029		
Dalapon Dicamba MCPP MCPA Dichloroprop 2,4-D	Result ND ND ND ND ND ND ND ND ND N	ug/L ug/L ug/L ug/L ug/L ug/L	RL 4.6 0.19 190 190 1.9	Flag Dil 10 10 10 10 10 10 10 10 10 10 10 10 10	Prepared 09/26/16 09/26/16 09/26/16 09/26/16 09/26/16 09/26/16	Analyzed 09/27/16 15:00 09/27/16 15:00 09/27/16 15:00 09/27/16 15:00 09/27/16 15:00 09/27/16 15:00	1029 1029 1029 1029 1029 1029 1029		
Dalapon Dicamba MCPP MCPA Dichloroprop 2,4-D 2,4,5-TP (Silvex)	Result ND ND ND ND ND ND ND ND ND N	ug/L ug/L ug/L ug/L ug/L ug/L ug/L	RL 4.6 0.19 190 190 1.9 1.9 0.19	Flag Dil 10 10 10 10 10 10 10 10 10 10 10 10 10	Prepared 09/26/16 09/26/16 09/26/16 09/26/16 09/26/16 09/26/16 09/26/16	Analyzed 09/27/16 15:00 09/27/16 15:00 09/27/16 15:00 09/27/16 15:00 09/27/16 15:00 09/27/16 15:00 09/27/16 15:00	1029 1029 1029 1029 1029 1029 1029 1029		

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16092115

Icor Ltd., Middleburg, VA

September 29, 2016

Sample ID: M1Hpt-07	Date/Time Sampled: 09/21/20 Date/Time Received: 09/21/20						15-006		
Matrix: GROUND WATER									
TCL Volatile Organic Compounds	Analytica	I Method: S	W-846 8260	В	٢	Preparation Meth	10d: 5030B		
	Result	Units	RL	Flag D	il	Prepared	Analyzed	Analyst	
Acetone	ND	ug/L	10		1	09/27/16	09/27/16 17:15	1011	
Benzene	25	ug/L	1.0		1	09/27/16	09/27/16 17:15	1011	
Bromochloromethane	ND	ug/L	1.0		1	09/27/16	09/27/16 17:15	1011	
Bromodichloromethane	ND	ug/L	1.0		1	09/27/16	09/27/16 17:15	1011	
Bromoform	ND	ug/L	5.0		1	09/27/16	09/27/16 17:15	1011	
Bromomethane	ND	ug/L	1.0		1	09/27/16	09/27/16 17:15	1011	
2-Butanone (MEK)	ND	ug/L	10		1	09/27/16	09/27/16 17:15	1011	
Carbon Disulfide	ND	ug/L	10		1	09/27/16	09/27/16 17:15	1011	
Carbon Tetrachloride	ND	ug/L	1.0		1	09/27/16	09/27/16 17:15	1011	
Chlorobenzene	ND	ug/L	1.0		1	09/27/16	09/27/16 17:15	1011	
Chloroethane	ND	ug/L	1.0		1	09/27/16	09/27/16 17:15	1011	
Chloroform	ND	ug/L	1.0		1	09/27/16	09/27/16 17:15	1011	
Chloromethane	ND	ug/L	1.0		1	09/27/16	09/27/16 17:15	1011	
Cyclohexane	ND	ug/L	10		1	09/27/16	09/27/16 17:15	1011	
1,2-Dibromo-3-Chloropropane	ND	ug/L	10		1	09/27/16	09/27/16 17:15	1011	
Dibromochloromethane	ND	ug/L	1.0		1	09/27/16	09/27/16 17:15	1011	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0		1	09/27/16	09/27/16 17:15	1011	
1,2-Dichlorobenzene	ND	ug/L	1.0		1	09/27/16	09/27/16 17:15	1011	
1,3-Dichlorobenzene	ND	ug/L	1.0		1	09/27/16	09/27/16 17:15	1011	
Dichlorodifluoromethane	ND	ug/L	1.0		1	09/27/16	09/27/16 17:15	1011	
1,4-Dichlorobenzene	ND	ug/L	1.0		1	09/27/16	09/27/16 17:15	1011	
1,1-Dichloroethane	ND	ug/L	1.0		1	09/27/16	09/27/16 17:15	1011	
1,2-Dichloroethane	ND	ug/L	1.0		1	09/27/16	09/27/16 17:15	1011	
1,1-Dichloroethene	ND	ug/L	1.0		1	09/27/16	09/27/16 17:15	1011	
cis-1,2-Dichloroethene	ND	ug/L	1.0		1	09/27/16	09/27/16 17:15	1011	
1,2-Dichloropropane	ND	ug/L	1.0		1	09/27/16	09/27/16 17:15	1011	
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	09/27/16	09/27/16 17:15	1011	
trans-1,3-Dichloropropene	ND	ug/L	1.0		1	09/27/16	09/27/16 17:15	1011	
trans-1,2-Dichloroethene	ND	ug/L	1.0		1	09/27/16	09/27/16 17:15	1011	
Ethylbenzene	61	ug/L	1.0		1	09/27/16	09/27/16 17:15	1011	

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16092115

Icor Ltd., Middleburg, VA

September 29, 2016

Sample ID: M1Hpt-07	Date/Time Sampled: 09/21/2016 12:20	PSS Sample ID: 16092115-006
Matrix: GROUND WATER	Date/Time Received: 09/21/2016 14:45	

TCL Volatile Organic Compounds	Analytical Method: SW-846 8260 B			Preparation Method: 5030B			
_	Result	Units	RL F	lag Dil	Prepared	Analyzed	Analyst
2-Hexanone	ND	ug/L	10	1	09/27/16	09/27/16 17:15	5 1011
Isopropylbenzene	12	ug/L	1.0	1	09/27/16	09/27/16 17:15	5 1011
Methyl Acetate	ND	ug/L	10	1	09/27/16	09/27/16 17:15	5 1011
Methylcyclohexane	ND	ug/L	10	1	09/27/16	09/27/16 17:15	5 1011
Methylene Chloride	ND	ug/L	1.0	1	09/27/16	09/27/16 17:15	5 1011
4-Methyl-2-Pentanone	ND	ug/L	5.0	1	09/27/16	09/27/16 17:15	5 1011
Methyl-t-butyl ether	1.0	ug/L	1.0	1	09/27/16	09/27/16 17:15	5 1011
Naphthalene	830	ug/L	10	10	09/27/16	09/28/16 12:56	1011
Styrene	ND	ug/L	1.0	1	09/27/16	09/27/16 17:15	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1	09/27/16	09/27/16 17:15	1011
Tetrachloroethene	ND	ug/L	1.0	1	09/27/16	09/27/16 17:15	1011
Toluene	3.7	ug/L	1.0	1	09/27/16	09/27/16 17:15	1011
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1	09/27/16	09/27/16 17:15	1011
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1	09/27/16	09/27/16 17:15	1011
1,1,1-Trichloroethane	ND	ug/L	1.0	1	09/27/16	09/27/16 17:15	5 1011
Trichloroethene	ND	ug/L	1.0	1	09/27/16	09/27/16 17:15	5 1011
1,1,2-Trichloroethane	ND	ug/L	1.0	1	09/27/16	09/27/16 17:15	5 1011
Trichlorofluoromethane	ND	ug/L	5.0	1	09/27/16	09/27/16 17:15	5 1011
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	ug/L	1.0	1	09/27/16	09/27/16 17:15	5 1011
Vinyl Chloride	ND	ug/L	1.0	1	09/27/16	09/27/16 17:15	5 1011
m,p-Xylenes	32	ug/L	2.0	1	09/27/16	09/27/16 17:15	5 1011
o-Xylene	32	ug/L	1.0	1	09/27/16	09/27/16 17:15	5 1011

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

Date/Time Sampled: 09/21/2016 12:20 PSS Sample ID: 16092115-006

No: 16092115

Icor Ltd., Middleburg, VA

September 29, 2016

Project Name: Robinson Terminal North Project Location: 500/501 N. Union St.

Sample ID: M1Hpt-07

4-Chlorophenyl Phenyl ether

Dibenz(a,h)Anthracene

3,3-Dichlorobenzidine

2,4-Dichlorophenol

Chrysene

Dibenzofuran

Matrix: GROUND WATER	Date/Time Received: 09/21/2016 14:45					•				
TCL Semivolatile Organic Compounds							Preparation Method: 3510C			
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst		
Acenaphthene	36	ug/L	5.0		1	09/21/16	09/23/16 18:52	2 1055		
Acenaphthylene	ND	ug/L	5.0		1	09/21/16	09/23/16 18:52	2 1055		
Acetophenone	ND	ug/L	5.0		1	09/21/16	09/23/16 18:52	2 1055		
Anthracene	ND	ug/L	5.0		1	09/21/16	09/23/16 18:52	2 1055		
Atrazine	ND	ug/L	5.0		1	09/21/16	09/23/16 18:52	2 1055		
Benzo(a)anthracene	ND	ug/L	5.0		1	09/21/16	09/23/16 18:52	2 1055		
Benzo(a)pyrene	ND	ug/L	5.0		1	09/21/16	09/23/16 18:52	2 1055		
Benzo(b)fluoranthene	ND	ug/L	5.0		1	09/21/16	09/23/16 18:52	2 1055		
Benzo(g,h,i)perylene	ND	ug/L	5.0		1	09/21/16	09/23/16 18:52	2 1055		
Benzo(k)fluoranthene	ND	ug/L	5.0		1	09/21/16	09/23/16 18:52	2 1055		
Biphenyl (Diphenyl)	7.0	ug/L	5.0		1	09/21/16	09/23/16 18:52	2 1055		
Butyl benzyl phthalate	ND	ug/L	5.0		1	09/21/16	09/23/16 18:52	2 1055		
bis(2-chloroethoxy) methane	ND	ug/L	5.0		1	09/21/16	09/23/16 18:52	2 1055		
bis(2-chloroethyl) ether	ND	ug/L	5.0		1	09/21/16	09/23/16 18:52	2 1055		
bis(2-chloroisopropyl) ether	ND	ug/L	5.0		1	09/21/16	09/23/16 18:52	2 1055		
bis(2-ethylhexyl) phthalate	ND	ug/L	5.0		1	09/21/16	09/23/16 18:52	2 1055		
4-Bromophenylphenyl ether	ND	ug/L	5.0		1	09/21/16	09/23/16 18:52	2 1055		
Di-n-butyl phthalate	ND	ug/L	5.0		1	09/21/16	09/23/16 18:52	2 1055		
Carbazole	ND	ug/L	5.0		1	09/21/16	09/23/16 18:52	2 1055		
Caprolactam	ND	ug/L	5.0		1	09/21/16	09/23/16 18:52	2 1055		
4-Chloro-3-methyl phenol	ND	ug/L	5.0		1	09/21/16	09/23/16 18:52	2 1055		
4-Chloroaniline	ND	ug/L	5.0		1	09/21/16	09/23/16 18:52	2 1055		
2-Chloronaphthalene	ND	ug/L	5.0		1	09/21/16	09/23/16 18:52	2 1055		
2-Chlorophenol	ND	ug/L	5.0		1	09/21/16	09/23/16 18:52	2 1055		
4.011 1 1.01	NE					00/04/40	00/00/40 40 50			

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09/21/16 09/23/16 18:52 1055

09/21/16 09/23/16 18:52 1055

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16092115

Icor Ltd., Middleburg, VA

September 29, 2016

Sample ID: M1Hpt-07 Matrix: GROUND WATER			e Sampled: e Received:			• • • • • • • • • • • • • • • • • • •	e ID: 1609211	5-006
TCL Semivolatile Organic Compounds			SW-846 8270	Preparation Method: 3510C				
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Diethyl phthalate	ND	ug/L	5.0		1	09/21/16	09/23/16 18:52	1055
Dimethyl phthalate	ND	ug/L	5.0		1	09/21/16	09/23/16 18:52	1055
2,4-Dimethylphenol	ND	ug/L	5.0		1	09/21/16	09/23/16 18:52	1055
4,6-Dinitro-2-methyl phenol	ND	ug/L	5.0		1	09/21/16	09/23/16 18:52	1055
2,4-Dinitrophenol	ND	ug/L	10		1	09/21/16	09/23/16 18:52	1055
2,4-Dinitrotoluene	ND	ug/L	5.0		1	09/21/16	09/23/16 18:52	1055
2,6-Dinitrotoluene	ND	ug/L	5.0		1	09/21/16	09/23/16 18:52	1055
Fluoranthene	ND	ug/L	5.0		1	09/21/16	09/23/16 18:52	1055
Fluorene	8.2	ug/L	5.0		1	09/21/16	09/23/16 18:52	1055
Hexachlorobenzene	ND	ug/L	5.0		1	09/21/16	09/23/16 18:52	1055
Hexachlorobutadiene	ND	ug/L	5.0		1	09/21/16	09/23/16 18:52	1055
Hexachlorocyclopentadiene	ND	ug/L	5.0		1	09/21/16	09/23/16 18:52	1055
Hexachloroethane	ND	ug/L	5.0		1	09/21/16	09/23/16 18:52	1055
Indeno(1,2,3-c,d)Pyrene	ND	ug/L	5.0		1	09/21/16	09/23/16 18:52	1055
Isophorone	ND	ug/L	5.0		1	09/21/16	09/23/16 18:52	1055
2-Methylnaphthalene	40	ug/L	5.0		1	09/21/16	09/23/16 18:52	1055
2-Methyl phenol	ND	ug/L	5.0		1	09/21/16	09/23/16 18:52	1055
3&4-Methylphenol	ND	ug/L	5.0		1	09/21/16	09/23/16 18:52	1055
Naphthalene	200	ug/L	25		5	09/21/16	09/26/16 14:49	1055
2-Nitroaniline	ND	ug/L	5.0		1	09/21/16	09/23/16 18:52	1055
3-Nitroaniline	ND	ug/L	5.0		1	09/21/16	09/23/16 18:52	1055
4-Nitroaniline	ND	ug/L	5.0		1	09/21/16	09/23/16 18:52	1055
Nitrobenzene	ND	ug/L	5.0		1	09/21/16	09/23/16 18:52	1055
2-Nitrophenol	ND	ug/L	5.0		1	09/21/16	09/23/16 18:52	1055
4-Nitrophenol	ND	ug/L	5.0		1	09/21/16	09/23/16 18:52	1055
N-Nitrosodi-n-propyl amine	ND	ug/L	5.0		1	09/21/16	09/23/16 18:52	1055
N-Nitrosodiphenylamine	ND	ug/L	5.0		1	09/21/16	09/23/16 18:52	1055
Di-n-octyl phthalate	ND	ug/L	5.0		1	09/21/16	09/23/16 18:52	1055
Pentachlorophenol	ND	ug/L	5.0		1	09/21/16	09/23/16 18:52	1055
Phenanthrene	8.7	ug/L	5.0		1	09/21/16	09/23/16 18:52	1055

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16092115

Icor Ltd., Middleburg, VA

September 29, 2016

Sample ID: M1Hpt-07 Matrix: GROUND WATER			Sampled: 09/22 Received: 09/22		-	e ID: 1609211	5-006
TCL Semivolatile Organic Compounds	Analytica	l Method: S	W-846 8270 C	Preparation Method: 3510C			
	Result	Units	RL Flag	Dil	Prepared	Analyzed	Analyst
Phenol	ND	ug/L	5.0	1	09/21/16	09/23/16 18:52	1055
Pyrene	ND	ug/L	5.0	1	09/21/16	09/23/16 18:52	1055
Pyridine	ND	ug/L	5.0	1	09/21/16	09/23/16 18:52	1055
2,4,5-Trichlorophenol	ND	ug/L	5.0	1	09/21/16	09/23/16 18:52	1055
2,4,6-Trichlorophenol	ND	ug/L	5.0	1	09/21/16	09/23/16 18:52	2 1055

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16092115

Icor Ltd., Middleburg, VA

September 29, 2016

Sample ID: M1Hpt-05 Matrix: GROUND WATER			-		2016 11:15 2016 14:45	PSS Sample	e ID: 1609211	5-007		
PP Metals							Preparation Method: 3010A			
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst		
Antimony	ND	ug/L	5.0		1	09/22/16	09/23/16 00:53	1033		
Arsenic	560	ug/L	100		100	09/22/16	09/26/16 17:14	1033		
Beryllium	22	ug/L	1.0		1	09/22/16	09/23/16 15:42	1033		
Cadmium	52	ug/L	1.0		1	09/22/16	09/23/16 00:53	1033		
Chromium	570	ug/L	100		100	09/22/16	09/26/16 17:14	1033		
Copper	14,000	ug/L	100		100	09/22/16	09/26/16 17:14	1033		
Lead	260	ug/L	1.0		1	09/22/16	09/23/16 15:42	1033		
Mercury	ND	ug/L	0.20		1	09/22/16	09/23/16 15:42	1033		
Nickel	2,000	ug/L	100		100	09/22/16	09/26/16 17:14	1033		
Selenium	4.9	ug/L	1.0		1	09/22/16	09/23/16 00:53	1033		
Silver	ND	ug/L	1.0		1	09/22/16	09/23/16 00:53	1033		
Thallium	4.3	ug/L	1.0		1	09/22/16	09/23/16 00:53	1033		
Zinc	35,000	ug/L	2,000		100	09/22/16	09/26/16 17:14	1033		
Total Petroleum Hydrocarbons - DRO	Analytical Method: SW-846 8015 C				ı	Preparation Method: 3510C				
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst		
TPH-DRO (Diesel Range Organics)	0.52	mg/L	0.10		1	09/23/16	09/26/16 00:32	1045		
Total Petroleum Hydrocarbons-GRO	Analytica	l Method: SV	V-846 80150	С	1	Preparation Meth	nod: 5030B			
_	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst		
TPH-GRO (Gasoline Range Organics)	810	ug/L	100		1	09/22/16	09/22/16 14:58	1035		

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

Date/Time Sampled: 09/21/2016 11:15 PSS Sample ID: 16092115-007

No: 16092115

Icor Ltd., Middleburg, VA

September 29, 2016

Project Name: Robinson Terminal North Project Location: 500/501 N. Union St.

Sample ID: M1Hpt-05

Endrin ketone

Toxaphene

Chlordane

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Matrix: GROUND WATER		Date/Tim	e Received:	09/21/2016 14:	45		
Organochlorine Pesticides	Analytica	l Method:	SW-846 8081	В	Preparation Met	hod: 3510C	
	Result	Units	RL	Flag Dil	Prepared	Analyzed	Analyst
alpha-BHC	ND	ug/L	0.040	1	09/22/16	09/22/16 20:43	3 1029
gamma-BHC (Lindane)	ND	ug/L	0.040	1	09/22/16	09/22/16 20:43	3 1029
beta-BHC	ND	ug/L	0.040	1	09/22/16	09/22/16 20:43	3 1029
delta-BHC	ND	ug/L	0.040	1	09/22/16	09/22/16 20:43	3 1029
Heptachlor	ND	ug/L	0.040	1	09/22/16	09/22/16 20:43	3 1029
Aldrin	ND	ug/L	0.040	1	09/22/16	09/22/16 20:43	3 1029
Heptachlor epoxide	ND	ug/L	0.040	1	09/22/16	09/22/16 20:43	3 1029
gamma-Chlordane	ND	ug/L	0.040	1	09/22/16	09/22/16 20:43	3 1029
alpha-Chlordane	ND	ug/L	0.040	1	09/22/16	09/22/16 20:43	3 1029
4,4-DDE	ND	ug/L	0.040	1	09/22/16	09/22/16 20:43	3 1029
Endosulfan I	ND	ug/L	0.040	1	09/22/16	09/22/16 20:43	3 1029
Dieldrin	ND	ug/L	0.040	1	09/22/16	09/22/16 20:43	3 1029
Endrin	ND	ug/L	0.040	1	09/22/16	09/22/16 20:43	3 1029
4,4-DDD	ND	ug/L	0.040	1	09/22/16	09/22/16 20:43	3 1029
Endosulfan II	ND	ug/L	0.040	1	09/22/16	09/22/16 20:43	3 1029
4,4-DDT	ND	ug/L	0.040	1	09/22/16	09/22/16 20:43	3 1029
Endrin aldehyde	ND	ug/L	0.040	1	09/22/16	09/22/16 20:43	3 1029
Methoxychlor	ND	ug/L	0.040	1	09/22/16	09/22/16 20:43	3 1029
Endosulfan sulfate	ND	ug/L	0.040	1	09/22/16	09/22/16 20:43	3 1029

0.040

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ND

ug/L

ug/L

ug/L

09/22/16 09/22/16 20:43 1029 09/22/16 09/22/16 20:43 1029

09/22/16 09/22/16 20:43 1029

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16092115

Icor Ltd., Middleburg, VA

September 29, 2016

Sample ID: M1Hpt-05			e Sampled:			-	e ID: 16092115	5-007		
Matrix: GROUND WATER		Date/Time	e Received:	09/21/201	6 14:4	1 5				
Polychlorinated Biphenyls	Analytica	I Method:	SW-846 8082	Α			Preparation Method: 3510C			
	Daniell	11:4	DI	Flag Di	ı	Clean up Method				
	Result	Units		Flag Di		Prepared		Analyst		
PCB-1016	ND	ug/L	0.50		1	09/22/16	09/22/16 17:03			
PCB-1221	ND	ug/L	0.50		1	09/22/16	09/22/16 17:03			
PCB-1232	ND	ug/L	0.50		1	09/22/16	09/22/16 17:03	1029		
PCB-1242	ND	ug/L	0.50		1	09/22/16	09/22/16 17:03	1029		
PCB-1248	ND	ug/L	0.50		1	09/22/16	09/22/16 17:03	1029		
PCB-1254	ND	ug/L	0.50		1	09/22/16	09/22/16 17:03	1029		
PCB-1260	ND	ug/L	0.50		1	09/22/16	09/22/16 17:03	1029		
Chlorinated Herbicides	Analytica	I Mothod:	Q\M Q16 Q151	٨		Propagation Moth	od: 9151A			
Chlorinated Herbicides	Analytica	l Method:	SW-846 8151	Α		Preparation Meth	nod: 8151A			
Chlorinated Herbicides	Analytica Result	I Method: Units		A Flag Di	l	Preparation Meth		Analyst		
Chlorinated Herbicides Dalapon	•			Flag Di	0	·				
	Result	Units	RL	Flag Di 1		Prepared	Analyzed	1029		
Dalapon	Result ND	Units ug/L	RL 4.6	Flag Di 1	0	Prepared 09/26/16	Analyzed 09/27/16 23:08	1029		
Dalapon Dicamba	Result ND ND	Units ug/L ug/L	RL 4.6 0.19	Flag Di 1 1	0 0	Prepared 09/26/16 09/26/16	Analyzed 09/27/16 23:08 09/27/16 23:08	1029 1029 1029		
Dalapon Dicamba MCPP	Result ND ND ND	Units ug/L ug/L ug/L	4.6 0.19 190	Flag Di 1 1 1 1	0 0 0	Prepared 09/26/16 09/26/16 09/26/16	Analyzed 09/27/16 23:08 09/27/16 23:08 09/27/16 23:08	1029 1029 1029 1029		
Dalapon Dicamba MCPP MCPA	Result ND ND ND ND ND	Units ug/L ug/L ug/L ug/L	RL 4.6 0.19 190 190	Flag Di 1 1 1 1 1	0 0 0 0	Prepared 09/26/16 09/26/16 09/26/16 09/26/16	Analyzed 09/27/16 23:08 09/27/16 23:08 09/27/16 23:08 09/27/16 23:08	1029 1029 1029 1029 1029		
Dalapon Dicamba MCPP MCPA Dichloroprop	Result ND ND ND ND ND ND ND	Units ug/L ug/L ug/L ug/L ug/L	RL 4.6 0.19 190 190 1.9	Flag Di 1 1 1 1 1 1	0 0 0 0 0	Prepared 09/26/16 09/26/16 09/26/16 09/26/16	Analyzed 09/27/16 23:08 09/27/16 23:08 09/27/16 23:08 09/27/16 23:08 09/27/16 23:08	1029 1029 1029 1029 1029 1029		
Dalapon Dicamba MCPP MCPA Dichloroprop 2,4-D	Result ND ND ND ND ND ND ND ND ND N	Units ug/L ug/L ug/L ug/L ug/L ug/L ug/L	RL 4.6 0.19 190 190 1.9	Flag Di 1 1 1 1 1 1 1 1 1 1 1 1	0 0 0 0 0	Prepared 09/26/16 09/26/16 09/26/16 09/26/16 09/26/16 09/26/16	Analyzed 09/27/16 23:08 09/27/16 23:08 09/27/16 23:08 09/27/16 23:08 09/27/16 23:08 09/27/16 23:08	1029 1029 1029 1029 1029 1029 1029		
Dalapon Dicamba MCPP MCPA Dichloroprop 2,4-D 2,4,5-TP (Silvex)	Result ND ND ND ND ND ND ND ND ND N	ug/L ug/L ug/L ug/L ug/L ug/L ug/L	RL 4.6 0.19 190 190 1.9 1.9 0.19	Flag Di 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	0 0 0 0 0 0	Prepared 09/26/16 09/26/16 09/26/16 09/26/16 09/26/16 09/26/16	Analyzed 09/27/16 23:08 09/27/16 23:08 09/27/16 23:08 09/27/16 23:08 09/27/16 23:08 09/27/16 23:08 09/27/16 23:08	1029 1029 1029 1029 1029 1029 1029 1029		

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16092115

Icor Ltd., Middleburg, VA

September 29, 2016

Sample ID: M1Hpt-05 Matrix: GROUND WATER	Date/Time Sampled: 09/21/2016 11:15 Date/Time Received: 09/21/2016 14:45				PSS Sample ID: 16092115-007				
TCL Volatile Organic Compounds		l Method: SV				Preparation Method: 5030B			
_	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst	
Acetone	ND	ug/L	10		1	09/27/16	09/27/16 17:36	1011	
Benzene	110	ug/L	1.0		1	09/27/16	09/27/16 17:36	1011	
Bromochloromethane	ND	ug/L	1.0		1	09/27/16	09/27/16 17:36	1011	
Bromodichloromethane	ND	ug/L	1.0		1	09/27/16	09/27/16 17:36	1011	
Bromoform	ND	ug/L	5.0		1	09/27/16	09/27/16 17:36	1011	
Bromomethane	ND	ug/L	1.0		1	09/27/16	09/27/16 17:36	1011	
2-Butanone (MEK)	ND	ug/L	10		1	09/27/16	09/27/16 17:36	1011	
Carbon Disulfide	ND	ug/L	10		1	09/27/16	09/27/16 17:36	1011	
Carbon Tetrachloride	ND	ug/L	1.0		1	09/27/16	09/27/16 17:36	1011	
Chlorobenzene	ND	ug/L	1.0		1	09/27/16	09/27/16 17:36	1011	
Chloroethane	ND	ug/L	1.0		1	09/27/16	09/27/16 17:36	1011	
Chloroform	ND	ug/L	1.0		1	09/27/16	09/27/16 17:36	1011	
Chloromethane	ND	ug/L	1.0		1	09/27/16	09/27/16 17:36	1011	
Cyclohexane	ND	ug/L	10		1	09/27/16	09/27/16 17:36	1011	
1,2-Dibromo-3-Chloropropane	ND	ug/L	10		1	09/27/16	09/27/16 17:36	1011	
Dibromochloromethane	ND	ug/L	1.0		1	09/27/16	09/27/16 17:36	1011	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0		1	09/27/16	09/27/16 17:36	1011	
1,2-Dichlorobenzene	ND	ug/L	1.0		1	09/27/16	09/27/16 17:36	1011	
1,3-Dichlorobenzene	ND	ug/L	1.0		1	09/27/16	09/27/16 17:36	1011	
1,4-Dichlorobenzene	ND	ug/L	1.0		1	09/27/16	09/27/16 17:36	1011	
Dichlorodifluoromethane	ND	ug/L	1.0		1	09/27/16	09/27/16 17:36	1011	
1,1-Dichloroethane	ND	ug/L	1.0		1	09/27/16	09/27/16 17:36	1011	
1,2-Dichloroethane	ND	ug/L	1.0		1	09/27/16	09/27/16 17:36	1011	
1,1-Dichloroethene	ND	ug/L	1.0		1	09/27/16	09/27/16 17:36	1011	
cis-1,2-Dichloroethene	ND	ug/L	1.0		1	09/27/16	09/27/16 17:36	1011	
1,2-Dichloropropane	ND	ug/L	1.0		1	09/27/16	09/27/16 17:36	1011	
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	09/27/16	09/27/16 17:36	1011	
trans-1,3-Dichloropropene	ND	ug/L	1.0		1	09/27/16	09/27/16 17:36	1011	
trans-1,2-Dichloroethene	ND	ug/L	1.0		1	09/27/16	09/27/16 17:36	1011	
Ethylbenzene	26	ug/L	1.0		1	09/27/16	09/27/16 17:36	1011	

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16092115

Icor Ltd., Middleburg, VA

September 29, 2016

Sample ID: M1Hpt-05	Date/Time Sampled: 09/21/2016	11:15 PSS Sample ID: 16092115-007	
Matrix: GROUND WATER	Date/Time Received: 09/21/2016	14:45	
TCL Valatila Organia Campaunda	Applytical Mathady CW 046 0060 D	Dranavation Mathady FOOOD	

TCL Volatile Organic Compounds	Analytica	l Method: S	W-846 8260 B		Preparation Meth	nod: 5030B	
_	Result	Units	RL F	lag Dil	Prepared	Analyzed	Analyst
2-Hexanone	ND	ug/L	10	1	09/27/16	09/27/16 17:36	3 1011
Isopropylbenzene	4.5	ug/L	1.0	1	09/27/16	09/27/16 17:36	3 1011
Methyl Acetate	ND	ug/L	10	1	09/27/16	09/27/16 17:36	5 1011
Methylcyclohexane	ND	ug/L	10	1	09/27/16	09/27/16 17:36	3 1011
Methylene Chloride	ND	ug/L	1.0	1	09/27/16	09/27/16 17:36	3 1011
4-Methyl-2-Pentanone	ND	ug/L	5.0	1	09/27/16	09/27/16 17:36	3 1011
Methyl-t-butyl ether	ND	ug/L	1.0	1	09/27/16	09/27/16 17:36	3 1011
Naphthalene	170	ug/L	10	10	09/27/16	09/28/16 13:18	3 1011
Styrene	ND	ug/L	1.0	1	09/27/16	09/27/16 17:36	3 1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1	09/27/16	09/27/16 17:36	3 1011
Tetrachloroethene	ND	ug/L	1.0	1	09/27/16	09/27/16 17:36	3 1011
Toluene	2.4	ug/L	1.0	1	09/27/16	09/27/16 17:36	3 1011
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1	09/27/16	09/27/16 17:36	3 1011
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1	09/27/16	09/27/16 17:36	3 1011
1,1,1-Trichloroethane	ND	ug/L	1.0	1	09/27/16	09/27/16 17:36	3 1011
1,1,2-Trichloroethane	ND	ug/L	1.0	1	09/27/16	09/27/16 17:36	3 1011
Trichloroethene	ND	ug/L	1.0	1	09/27/16	09/27/16 17:36	3 1011
Trichlorofluoromethane	ND	ug/L	5.0	1	09/27/16	09/27/16 17:36	3 1011
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	ug/L	1.0	1	09/27/16	09/27/16 17:36	3 1011
Vinyl Chloride	ND	ug/L	1.0	1	09/27/16	09/27/16 17:36	3 1011
m,p-Xylenes	12	ug/L	2.0	1	09/27/16	09/27/16 17:36	5 1011
o-Xylene	23	ug/L	1.0	1	09/27/16	09/27/16 17:36	5 1011

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

Date/Time Sampled: 09/21/2016 11:15 PSS Sample ID: 16092115-007

No: 16092115

Icor Ltd., Middleburg, VA

September 29, 2016

Project Name: Robinson Terminal North Project Location: 500/501 N. Union St.

Sample ID: M1Hpt-05

Chrysene

Dibenzofuran

Dibenz(a,h)Anthracene

3,3-Dichlorobenzidine

2,4-Dichlorophenol

Matrix: GROUND WATER		2 - 4 - /Time - 5	p	00/21/2016 14	·15		
TCL Semivolatile Organic Compounds		Jate/Time F I Method: SV		09/21/2016 14	Preparation Met	had: 3510C	
TOE Gernivolatile Organic Gompounds	Analytica	ii Metriod. 3v	V-040 0270	C	Freparation Met	10u. 3310C	
	Result	Units	RL	Flag Dil	Prepared	Analyzed	Analyst
Acenaphthene	ND	ug/L	5.3	1	09/21/16	09/23/16 19:46	1055
Acenaphthylene	ND	ug/L	5.3	1	09/21/16	09/23/16 19:46	1055
Acetophenone	ND	ug/L	5.3	1	09/21/16	09/23/16 19:46	1055
Anthracene	ND	ug/L	5.3	1	09/21/16	09/23/16 19:46	1055
Atrazine	ND	ug/L	5.3	1	09/21/16	09/23/16 19:46	1055
Benzo(a)anthracene	ND	ug/L	5.3	1	09/21/16	09/23/16 19:46	1055
Benzo(a)pyrene	ND	ug/L	5.3	1	09/21/16	09/23/16 19:46	1055
Benzo(b)fluoranthene	ND	ug/L	5.3	1	09/21/16	09/23/16 19:46	1055
Benzo(g,h,i)perylene	ND	ug/L	5.3	1	09/21/16	09/23/16 19:46	1055
Benzo(k)fluoranthene	ND	ug/L	5.3	1	09/21/16	09/23/16 19:46	1055
Biphenyl (Diphenyl)	ND	ug/L	5.3	1	09/21/16	09/23/16 19:46	1055
Butyl benzyl phthalate	ND	ug/L	5.3	1	09/21/16	09/23/16 19:46	1055
bis(2-chloroethoxy) methane	ND	ug/L	5.3	1	09/21/16	09/23/16 19:46	1055
bis(2-chloroethyl) ether	ND	ug/L	5.3	1	09/21/16	09/23/16 19:46	1055
bis(2-chloroisopropyl) ether	ND	ug/L	5.3	1	09/21/16	09/23/16 19:46	1055
bis(2-ethylhexyl) phthalate	ND	ug/L	5.3	1	09/21/16	09/23/16 19:46	1055
4-Bromophenylphenyl ether	ND	ug/L	5.3	1	09/21/16	09/23/16 19:46	1055
Di-n-butyl phthalate	ND	ug/L	5.3	1	09/21/16	09/23/16 19:46	1055
Carbazole	ND	ug/L	5.3	1	09/21/16	09/23/16 19:46	1055
Caprolactam	ND	ug/L	5.3	1	09/21/16	09/23/16 19:46	1055
4-Chloro-3-methyl phenol	ND	ug/L	5.3	1	09/21/16	09/23/16 19:46	1055
4-Chloroaniline	ND	ug/L	5.3	1	09/21/16	09/23/16 19:46	1055
2-Chloronaphthalene	ND	ug/L	5.3	1	09/21/16	09/23/16 19:46	1055
2-Chlorophenol	ND	ug/L	5.3	1	09/21/16	09/23/16 19:46	1055
4-Chlorophenyl Phenyl ether	ND	ug/L	5.3	1	09/21/16	09/23/16 19:46	1055

5.3

5.3

5.3

5.3

5.3

1

1

ND

ND

ND

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09/21/16 09/23/16 19:46 1055

09/21/16 09/23/16 19:46 1055 09/21/16 09/23/16 19:46 1055

09/21/16 09/23/16 19:46 1055

09/21/16 09/23/16 19:46 1055

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16092115

Icor Ltd., Middleburg, VA

September 29, 2016

Sample ID: M1Hpt-05	Date/Time Sampled: 09/21/2016	5 11:15 PSS Sample ID: 16092115-007
Matrix: GROUND WATER	Date/Time Received: 09/21/2016	3 14:45
TCL Semivolatile Organic Compounds	Analytical Method: SW-846 8270 C	Preparation Method: 3510C

TCL Semivolatile Organic Compounds	Analytica	I Method: S	W-846 8270 C		Preparation Method: 3510C	
	Result	Units	RL Flag	Dil	Prepared Analyzed Ana	lyst
Diethyl phthalate	ND	ug/L	5.3	1	09/21/16 09/23/16 19:46 10	55
Dimethyl phthalate	ND	ug/L	5.3	1	09/21/16 09/23/16 19:46 10	55
2,4-Dimethylphenol	ND	ug/L	5.3	1	09/21/16 09/23/16 19:46 10	55
4,6-Dinitro-2-methyl phenol	ND	ug/L	5.3	1	09/21/16 09/23/16 19:46 10	55
2,4-Dinitrophenol	ND	ug/L	11	1	09/21/16 09/23/16 19:46 10:	55
2,4-Dinitrotoluene	ND	ug/L	5.3	1	09/21/16 09/23/16 19:46 10:	55
2,6-Dinitrotoluene	ND	ug/L	5.3	1	09/21/16 09/23/16 19:46 10	55
Fluoranthene	ND	ug/L	5.3	1	09/21/16 09/23/16 19:46 10:	55
Fluorene	ND	ug/L	5.3	1	09/21/16 09/23/16 19:46 10:	55
Hexachlorobenzene	ND	ug/L	5.3	1	09/21/16 09/23/16 19:46 10:	55
Hexachlorobutadiene	ND	ug/L	5.3	1	09/21/16 09/23/16 19:46 10:	55
Hexachlorocyclopentadiene	ND	ug/L	5.3	1	09/21/16 09/23/16 19:46 10	55
Hexachloroethane	ND	ug/L	5.3	1	09/21/16 09/23/16 19:46 10:	55
Indeno(1,2,3-c,d)Pyrene	ND	ug/L	5.3	1	09/21/16 09/23/16 19:46 10:	55
Isophorone	ND	ug/L	5.3	1	09/21/16 09/23/16 19:46 10:	55
2-Methylnaphthalene	16	ug/L	5.3	1	09/21/16 09/23/16 19:46 10	55
2-Methyl phenol	ND	ug/L	5.3	1	09/21/16 09/23/16 19:46 10	55
3&4-Methylphenol	ND	ug/L	5.3	1	09/21/16 09/23/16 19:46 10:	55
Naphthalene	83	ug/L	5.3	1	09/21/16 09/23/16 19:46 10:	55
2-Nitroaniline	ND	ug/L	5.3	1	09/21/16 09/23/16 19:46 10	55
3-Nitroaniline	ND	ug/L	5.3	1	09/21/16 09/23/16 19:46 10	55
4-Nitroaniline	ND	ug/L	5.3	1	09/21/16 09/23/16 19:46 10	55
Nitrobenzene	ND	ug/L	5.3	1	09/21/16 09/23/16 19:46 10:	55
2-Nitrophenol	ND	ug/L	5.3	1	09/21/16 09/23/16 19:46 10	55
4-Nitrophenol	ND	ug/L	5.3	1	09/21/16 09/23/16 19:46 10	55
N-Nitrosodi-n-propyl amine	ND	ug/L	5.3	1	09/21/16 09/23/16 19:46 10	55
N-Nitrosodiphenylamine	ND	ug/L	5.3	1	09/21/16 09/23/16 19:46 10	55
Di-n-octyl phthalate	ND	ug/L	5.3	1	09/21/16 09/23/16 19:46 10	55
Pentachlorophenol	ND	ug/L	5.3	1	09/21/16 09/23/16 19:46 10	55
Phenanthrene	ND	ug/L	5.3	1	09/21/16 09/23/16 19:46 10	55

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16092115

Icor Ltd., Middleburg, VA

September 29, 2016

Sample ID: M1Hpt-05 Matrix: GROUND WATER			Sampled: 09/21 Received: 09/21		•	e ID: 1609211	5-007
TCL Semivolatile Organic Compounds	Analytica	Method: S	W-846 8270 C		Preparation Meth	nod: 3510C	
	Result	Units	RL Flag	Dil	Prepared	Analyzed	Analyst
Phenol	ND	ug/L	5.3	1	09/21/16	09/23/16 19:40	6 1055
Pyrene	ND	ug/L	5.3	1	09/21/16	09/23/16 19:40	6 1055
Pyridine	ND	ug/L	5.3	1	09/21/16	09/23/16 19:40	6 1055
2,4,5-Trichlorophenol	ND	ug/L	5.3	1	09/21/16	09/23/16 19:40	6 1055
2,4,6-Trichlorophenol	ND	ug/L	5.3	1	09/21/16	09/23/16 19:40	3 1055



Case Narrative Summary

Client Name: Icor Ltd.

Project Name: Robinson Terminal North

Work Order Number(s): 16092115

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

The analyses of chlorine, pH, dissolved oxygen, temperature and sulfite for drinking water and non-potable samples tested for compliance have a maximum holding time of 15 minutes. As such, all laboratory analyses for these analytes exceed holding times.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

All sample receipt conditions were acceptable.

Analytical:

Organochlorine Pesticides

Batch: 136034

Laboratory control sample and/or laboratory control sample duplicate (LCS/LCSD) exceedances identified; see LCS summary form.

Chlorinated Herbicides

Batch: 136151

The recoveries of MCPP and MCPA in the closing CCV-R4 were 75% and 79% (80-120%). All samples were confirmed on second column.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.



Analytical Data Package Information Summary

Work Order(s): 16092115

Report Prepared For: Icor Ltd., Middleburg, VA Project Name: Robinson Terminal North Project Manager: Mike Bruzzesi

Method	Client Sample Id	Analysis Type	Lab Sample Id	Analyst	Mtx	Prep Batch	Analytical Batch	Sampled	Prepared	Analyzed
SW-846 6020 A	TEC-MW4	Initial	16092115-002	1033	\bowtie	99979	136043	09/21/2016	09/22/2016 10:57	09/23/2016 00:23
	ECS-MW4	Initial	16092115-003	1033	×	99979	136043	09/21/2016	09/22/2016 10:57	09/23/2016 00:29
	M1Hpt-15	Initial	16092115-004	1033	×	99979	136043	09/21/2016	09/22/2016 10:57	09/23/2016 00:35
	M1Hpt-08	Initial	16092115-005	1033	M	99929	136043	09/21/2016	09/22/2016 10:57	09/23/2016 00:41
	M1Hpt-07	Initial	16092115-006	1033	M	99929	136043	09/21/2016	09/22/2016 10:57	09/23/2016 00:47
	M1Hpt-05	Initial	16092115-007	1033	×	99929	136043	09/21/2016	09/22/2016 10:57	09/23/2016 00:53
	62666-1-BKS	BKS	62666-1-BKS	1033	M	99929	136043		09/22/2016 10:57	09/22/2016 23:04
	62666-1-BLK	BLK	62666-1-BLK	1033	×	99929	136043		09/22/2016 10:57	09/22/2016 22:58
	NSS Excavation S	MS	16092202-001 S	1033	M	99929	136043	09/21/2016	09/22/2016 10:57	09/22/2016 23:16
	NSS Excavation SD	MSD	16092202-001 SD	1033	×	99929	136043	09/21/2016	09/22/2016 10:57	09/22/2016 23:22
	TEC-MW4	Reanalysis	16092115-002	1033	\bowtie	99979	136056	09/21/2016	09/22/2016 10:57	09/23/2016 15:11
	ECS-MW4	Reanalysis	16092115-003	1033	×	99929	136056	09/21/2016	09/22/2016 10:57	09/23/2016 15:17
	M1Hpt-15	Reanalysis	16092115-004	1033	M	99929	136056	09/21/2016	09/22/2016 10:57	09/23/2016 15:23
	M1Hpt-08	Reanalysis	16092115-005	1033	×	99979	136056	09/21/2016	09/22/2016 10:57	09/23/2016 15:29
	M1Hpt-07	Reanalysis	16092115-006	1033	×	99979	136056	09/21/2016	09/22/2016 10:57	09/23/2016 15:36
	M1Hpt-05	Reanalysis	16092115-007	1033	×	99979	136056	09/21/2016	09/22/2016 10:57	09/23/2016 15:42
	M1Hpt-15	Reanalysis	16092115-004	1033	A	99979	136114	09/21/2016	09/22/2016 10:57	09/26/2016 17:08
	M1Hpt-05	Reanalysis	16092115-007	1033	×	99929	136114	09/21/2016	09/22/2016 10:57	09/26/2016 17:14
SW-846 8015 C	TEC-MW2	Initial	16092115-001	1045	W	62675	136055	09/21/2016	09/23/2016 08:10	09/25/2016 23:16
	TEC-MW4	Initial	16092115-002	1045	×	62675	136055	09/21/2016	09/23/2016 08:10	09/25/2016 23:16
	ECS-MW4	Initial	16092115-003	1045	\bowtie	62675	136055	09/21/2016	09/23/2016 08:10	09/25/2016 23:41
	M1Hpt-15	Initial	16092115-004	1045	\bowtie	62675	136055	09/21/2016	09/23/2016 08:10	09/25/2016 23:41
	M1Hpt-08	Initial	16092115-005	1045	\bowtie	62675	136055	09/21/2016	09/23/2016 08:10	09/26/2016 00:07
	M1Hpt-07	Initial	16092115-006	1045	\bowtie	62675	136055	09/21/2016	09/23/2016 08:10	09/26/2016 00:07
	M1Hpt-05	Initial	16092115-007	1045	\bowtie	62675	136055	09/21/2016	09/23/2016 08:10	09/26/2016 00:32
	62675-1-BKS	BKS	62675-1-BKS	1045	M	62675	136055		09/23/2016 08:10	09/23/2016 11:50
	62675-1-BLK	BLK	62675-1-BLK	1045	\otimes	62675	136055		09/23/2016 08:10	09/23/2016 11:50
	62675-1-BSD	BSD	62675-1-BSD	1045	\geqslant	62675	136055		09/23/2016 08:10	09/23/2016 12:15

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Analytical Data Package Information Summary

Work Order(s): 16092115

Report Prepared For: Icor Ltd., Middleburg, VA Project Name: Robinson Terminal North Project Manager: Mike Bruzzesi

Method	Client Sample Id	Analysis Type	Lab Sample Id	Analyst	Mtx	Prep Batch	Analytical Batch	Sampled	Prepared	Analyzed
SW-846 8015C	TEC-MW2	Initial	16092115-001	1035	×	62674	136017	09/21/2016	09/22/2016 08:27	09/22/2016 10:43
	TEC-MW4	Initial	16092115-002	1035	×	62674	136017	09/21/2016	09/22/2016 08:27	09/22/2016 12:51
	ECS-MW4	Initial	16092115-003	1035	×	62674	136017	09/21/2016	09/22/2016 08:27	09/22/2016 13:17
	M1Hpt-15	Initial	16092115-004	1035	×	62674	136017	09/21/2016	09/22/2016 08:27	09/22/2016 13:42
	M1Hpt-08	Initial	16092115-005	1035	\bowtie	62674	136017	09/21/2016	09/22/2016 08:27	09/22/2016 14:08
	M1Hpt-07	Initial	16092115-006	1035	\bowtie	62674	136017	09/21/2016	09/22/2016 08:27	09/22/2016 14:33
	M1Hpt-05	Initial	16092115-007	1035	M	62674	136017	09/21/2016	09/22/2016 08:27	09/22/2016 14:58
	62674-2-BKS	BKS	62674-2-BKS	1035	\bowtie	62674	136017		09/22/2016 08:27	09/22/2016 12:00
	62674-2-BLK	BLK	62674-2-BLK	1035	\bowtie	62674	136017		09/22/2016 08:27	09/22/2016 10:18
	TEC-MW2 S	MS	16092115-001 S	1035	\bowtie	62674	136017	09/21/2016	09/22/2016 08:27	09/22/2016 11:09
	TEC-MW2 SD	MSD	16092115-001 SD	1035	×	62674	136017	09/21/2016	09/22/2016 08:27	09/22/2016 11:34
SW-846 8081 B	TEC-MW4	Initial	16092115-002	1029	M	62668	136034	09/21/2016	09/22/2016 12:28	09/22/2016 22:35
	ECS-MW4	Initial	16092115-003	1029	\bowtie	62668	136034	09/21/2016	09/22/2016 12:28	09/22/2016 19:47
	M1Hpt-15	Initial	16092115-004	1029	\bowtie	62668	136034	09/21/2016	09/22/2016 12:28	09/22/2016 22:07
	M1Hpt-08	Initial	16092115-005	1029	\bowtie	62668	136034	09/21/2016	09/22/2016 12:28	09/26/2016 15:07
	M1Hpt-07	Initial	16092115-006	1029	\bowtie	62668	136034	09/21/2016	09/22/2016 12:28	09/22/2016 21:39
	M1Hpt-05	Initial	16092115-007	1029	\bowtie	62668	136034	09/21/2016	09/22/2016 12:28	09/22/2016 20:43
	62668-1-BKS	BKS	62668-1-BKS	1029	\bowtie	62668	136034		09/22/2016 12:28	09/22/2016 23:31
	62668-1-BLK	BLK	62668-1-BLK	1029	\bowtie	62668	136034		09/22/2016 12:28	09/22/2016 23:59
	62668-1-BSD	BSD	62668-1-BSD	1029	×	62668	136034		09/22/2016 12:28	09/22/2016 23:03
SW-846 8082 A	TEC-MW4	Initial	16092115-002	1029	M	62667	136036	09/21/2016	09/22/2016 12:26	09/22/2016 20:25
	ECS-MW4	Initial	16092115-003	1029	\bowtie	62667	136036	09/21/2016	09/22/2016 12:26	09/22/2016 19:56
	M1Hpt-15	Initial	16092115-004	1029	\bowtie	62667	136036	09/21/2016	09/22/2016 12:26	09/22/2016 19:27
	M1Hpt-08	Initial	16092115-005	1029	\bowtie	62667	136036	09/21/2016	09/22/2016 12:26	09/22/2016 16:33
	M1Hpt-07	Initial	16092115-006	1029	×	62667	136036	09/21/2016	09/22/2016 12:26	09/22/2016 18:59
	M1Hpt-05	Initial	16092115-007	1029	×	62667	136036	09/21/2016	09/22/2016 12:26	09/22/2016 17:03
	62667-1-BKS	BKS	62667-1-BKS	1029	×	62667	136036		09/22/2016 12:26	09/22/2016 15:35
	62667-1-BLK	BLK	62667-1-BLK	1029	≽	62667	136036		09/22/2016 12:26	09/22/2016 15:06

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Analytical Data Package Information Summary

Work Order(s): 16092115

Report Prepared For: Icor Ltd., Middleburg, VA Project Name: Robinson Terminal North Project Manager: Mike Bruzzesi

Method	Client Sample Id	Analysis Type	Lab Sample Id	Analyst	Mtx	Prep Batch	Analytical Batch	Sampled	Prepared	Analyzed
SW-846 8082 A	62667-1-BSD	BSD	62667-1-BSD	1029	\otimes	62667	136036		09/22/2016 12:26	09/22/2016 16:04
SW-846 8151 A	TEC-MW4	Initial	16092115-002	1029	×	62706	136151	09/21/2016	09/26/2016 10:57	09/27/2016 12:18
	ECS-MW4	Initial	16092115-003	1029	M	62706	136151	09/21/2016	09/26/2016 10:57	09/28/2016 00:46
	M1Hpt-15	Initial	16092115-004	1029	M	62706	136151	09/21/2016	09/26/2016 10:57	09/28/2016 00:13
	M1Hpt-08	Initial	16092115-005	1029	×	62706	136151	09/21/2016	09/26/2016 10:57	09/28/2016 01:52
	M1Hpt-07	Initial	16092115-006	1029	×	62706	136151	09/21/2016	09/26/2016 10:57	09/27/2016 15:00
	M1Hpt-05	Initial	16092115-007	1029	×	62706	136151	09/21/2016	09/26/2016 10:57	09/27/2016 23:08
	62706-1-BKS	BKS	62706-1-BKS	1029	M	62706	136151		09/26/2016 10:57	09/27/2016 13:56
	62706-1-BLK	BLK	62706-1-BLK	1029	×	62706	136151		09/26/2016 10:57	09/27/2016 13:23
	62706-1-BSD	BSD	62706-1-BSD	1029	×	62706	136151	-	09/26/2016 10:57	09/27/2016 14:28
SW-846 8260 B	TEC-MW2	Initial	16092115-001	1011	M	62702	136066	09/21/2016	09/23/2016 08:58	09/23/2016 19:52
	TEC-MW4	Initial	16092115-002	1011	×	62702	136066	09/21/2016	09/23/2016 08:58	09/23/2016 20:14
	ECS-MW4	Initial	16092115-003	1011	M	62702	136066	09/21/2016	09/23/2016 08:58	09/23/2016 20:36
	M1Hpt-15	Initial	16092115-004	1011	×	62702	136066	09/21/2016	09/23/2016 08:58	09/23/2016 20:57
	62702-1-BKS	BKS	62702-1-BKS	1011	×	62702	136066		09/23/2016 08:58	09/23/2016 10:07
	62702-1-BLK	BLK	62702-1-BLK	1011	×	62702	136066		09/23/2016 08:58	09/23/2016 10:50
	MW-2 S	MS	16092117-005 S	1011	×	62702	136066	09/21/2016	09/23/2016 08:58	09/23/2016 14:06
	MW-2 SD	MSD	16092117-005 SD	1011	×	62702	136066	09/21/2016	09/23/2016 08:58	09/23/2016 14:28
	M1Hpt-08	Initial	16092115-005	1011	×	62733	136140	09/21/2016	09/27/2016 11:17	09/27/2016 15:49
	M1Hpt-07	Initial	16092115-006	1011	×	62733	136140	09/21/2016	09/27/2016 11:17	09/27/2016 17:15
	M1Hpt-05	Initial	16092115-007	1011	×	62733	136140	09/21/2016	09/27/2016 11:17	09/27/2016 17:36
	62733-1-BKS	BKS	62733-1-BKS	1011	×	62733	136140		09/27/2016 11:17	09/27/2016 12:15
	62733-1-BLK	BLK	62733-1-BLK	1011	×	62733	136140		09/27/2016 11:17	09/27/2016 12:57
	M1Hpt-08 S	MS	16092115-005 S	1011	×	62733	136140	09/21/2016	09/27/2016 11:17	09/27/2016 16:10
	M1Hpt-08 SD	MSD	16092115-005 SD	1011	×	62733	136140	09/21/2016	09/27/2016 11:17	09/27/2016 16:32
	62744-1-BLK	BLK	62744-1-BLK	1011	×	62744	136153		09/28/2016 09:50	09/28/2016 12:29
	M1Hpt-07	Reanalysis	16092115-006	1011	×	62733	136153	09/21/2016	09/27/2016 11:17	09/28/2016 12:56
	M1Hpt-05	Reanalysis	16092115-007	1011	≽	62733	136153	09/21/2016	09/27/2016 11:17	09/28/2016 13:18

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Analytical Data Package Information Summary

Work Order(s): 16092115
Report Prepared For: Icor Ltd., Middleburg, VA
Project Name: Robinson Terminal North

Project Manager: N		Mike Bruzzesi
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Method	Client Sample Id	Analysis Type	Lab Sample Id	Analyst	Mtx	Prep Batch	Client Sample Id Analysis Type Lab Sample Id Analyst Mtx Prep Batch Analytical Batch Sampled	Sampled	Prepared	Analyzed
SW-846 8270 C	TEC-MW4	Initial	16092115-002	1055	M	62636	136050	09/21/2016	09/21/2016 11:00	09/22/2016 18:25
	ECS-MW4	Initial	16092115-003	1055	×	62636	136050	09/21/2016	09/21/2016 11:00	09/22/2016 18:52
	62636-1-BKS	BKS	62636-1-BKS	1055	M	62636	136050		09/21/2016 11:00	09/21/2016 22:27
	62636-1-BLK	BLK	62636-1-BLK	1055	M	62636	136050		09/21/2016 11:00	09/21/2016 22:00
	62636-1-BSD	BSD	62636-1-BSD	1055	A	62636	136050		09/21/2016 11:00	09/21/2016 22:54
	M1Hpt-15	Initial	16092115-004	1055	×	62636	136093	09/21/2016	09/21/2016 11:00	09/23/2016 17:32
	M1Hpt-08	Initial	16092115-005	1055	A	62636	136093	09/21/2016	09/21/2016 11:00	09/23/2016 17:59
	M1Hpt-07	Initial	16092115-006	1055	A	62636	136093	09/21/2016	09/21/2016 11:00	09/23/2016 18:52
	M1Hpt-05	Initial	16092115-007	1055	A	62636	136093	09/21/2016	09/21/2016 11:00	09/23/2016 19:46
	M1Hpt-07	Reanalysis	16092115-006	1055	×	62636	136093	09/21/2016	09/21/2016 11:00	09/26/2016 14:49

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Analytical Method Seq Number: PSS Sample ID:	: SW-846 8015 C 136055 16092115-001		Matrix:	Ground Water	Prep Method: Date Prep	
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
o-Terphenyl		89		46-111	%	09/25/16 23:16
Analytical Method Seq Number: PSS Sample ID:	: SW-846 8015C 136017 16092115-001		Matrix:	Ground Water	Prep Method: Date Prep	
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
a,a,a-Trifluorotolue	ne	67		55-114	%	09/22/16 10:43
Analytical Method Seq Number: PSS Sample ID: Surrogate 4-Bromofluorobenz Dibromofluorometh	136066 16092115-001 ene	%Rec 103 102	Matrix: Flag	Ground Water Limits 86-111 91-119	Prep Method: Date Prep: Units % %	
Toluene-D8		105		90-117	%	09/23/16 19:52
Analytical Method Seq Number: PSS Sample ID:	: SW-846 8081 B 136034 16092115-002		Matrix:	Ground Water	Prep Method: Date Prep	
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
Decachlorobipheny Tetrachloro-m-xyler		86 52		43-150 40-126	% %	09/22/16 22:35 09/22/16 22:35
Analytical Method Seq Number: PSS Sample ID:	: SW-846 8082 A 136036 16092115-002		Matrix:	Ground Water	Prep Method: Date Prep	
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
Decachlorobipheny Tetrachloro-m-xyler		79 63		39-154 35-131	% %	09/22/16 20:25 09/22/16 20:25

Analytical Method Seq Number: PSS Sample ID:	: SW-846 8151 A 136151 16092115-002		Matrix:	Ground Water	Prep Method: Date Prep:	
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
2,4-Dichlorophenyl	acetic Acid	113		64-126	%	09/27/16 12:18
Analytical Method Seq Number: PSS Sample ID:	: SW-846 8270 C 136050 16092115-002		Matrix:	Ground Water	Prep Method: Date Prep:	SW3510C 09/21/2016
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
2-Fluorobiphenyl 2-Fluorophenol Nitrobenzene-d5 Phenol-d6 Terphenyl-D14 2,4,6-Tribromopher	nol	74 70 69 71 111 78		35-107 32-106 34-123 36-111 43-143 26-122	% % % %	09/22/16 18:25 09/22/16 18:25 09/22/16 18:25 09/22/16 18:25 09/22/16 18:25 09/22/16 18:25
Analytical Method Seq Number: PSS Sample ID:	: SW-846 8015 C 136055 16092115-002		Matrix:	Ground Water	Prep Method: Date Prep:	SW3510C 09/23/2016
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
o-Terphenyl		76		46-111	%	09/25/16 23:16
Analytical Method Seq Number: PSS Sample ID:	: SW-846 8015C 136017 16092115-002		Matrix:	Ground Water	Prep Method: Date Prep:	SW5030B 09/22/2016
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
a,a,a-Trifluorotolue	ne	68		55-114	%	09/22/16 12:51
Analytical Method Seq Number: PSS Sample ID:	: SW-846 8260 B 136066 16092115-002		Matrix:	Ground Water	Prep Method: Date Prep:	SW5030B 09/23/2016
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
4-Bromofluorobenz Dibromofluorometh Toluene-D8		103 103 106		86-111 91-119 90-117	%	09/23/16 20:14 09/23/16 20:14 09/23/16 20:14

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•	W-846 8081 B 36034 6092115-003	Matrix:	Ground Water	Prep Method: Date Prep:	SW3510C 09/22/2016
Surrogate	%Rec	Flag	Limits	Units	Analysis Date
Decachlorobiphenyl Tetrachloro-m-xylene	88 54		43-150 40-126		09/22/16 19:47 09/22/16 19:47
•	W-846 8082 A 36036 6092115-003	Matrix:	Ground Water	Prep Method: Date Prep:	SW3510C 09/22/2016
Surrogate	%Rec	Flag	Limits	Units	Analysis Date
Decachlorobiphenyl Tetrachloro-m-xylene	84 57		39-154 35-131		09/22/16 19:56 09/22/16 19:56
•	W-846 8151 A 36151 3692115-003	Matrix:	Ground Water	Prep Method: Date Prep:	SW8151A_PREP 09/26/2016
Surrogate	%Rec	Flag	Limits	Units	Analysis Date
2,4-Dichlorophenylace	tic Acid 105		64-126	%	09/28/16 00:46
•	W-846 8270 C 86050 6092115-003	Matrix:	Ground Water	Prep Method: Date Prep:	SW3510C 09/21/2016
Surrogate	%Rec	Flag	Limits	Units	Analysis Date
2-Fluorobiphenyl 2-Fluorophenol Nitrobenzene-d5 Phenol-d6 Terphenyl-D14 2,4,6-Tribromophenol	73 70 66 70 114 67		35-107 32-106 34-123 36-111 43-143 26-122	% % %	09/22/16 18:52 09/22/16 18:52 09/22/16 18:52 09/22/16 18:52 09/22/16 18:52 09/22/16 18:52
•	W-846 8015 C 36055 5092115-003	Matrix:	Ground Water	Prep Method: Date Prep:	SW3510C 09/23/2016
Surrogate	%Rec	Flag	Limits	Units	Analysis Date
o-Terphenyl	96		46-111	%	09/25/16 23:41

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Analytical Method	d: SW-846 8015C				Prep Method:	SW5030B
Seq Number:	136017		Matrix:	Ground Water	Date Prep:	
PSS Sample ID:	16092115-003				•	
Surrogate	10002110 000	%Rec	Flag	Limits	Units	Analysis Date
a,a,a-Trifluorotolue	ana	67		55-114	%	09/22/16 13:17
a,a,a-11111dorotoide	Sile .	07		33-114	70	03/22/10 13.17
Analytical Method					Prep Method:	
Seq Number:	136066		Matrix:	Ground Water	Date Prep:	09/23/2016
PSS Sample ID:	16092115-003					
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
4-Bromofluorobena	zene	99		86-111	%	09/23/16 20:36
Dibromofluorometh	nane	100		91-119		09/23/16 20:36
Toluene-D8		103		90-117	%	09/23/16 20:36
Analytical Method	d: SW-846 8081 B				Prep Method:	SW3510C
Seq Number:	136034		Matrix:	Ground Water	Date Prep:	09/22/2016
PSS Sample ID:	16092115-004					
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
Decachlorobiphen	γl	97		43-150	%	09/22/16 22:07
Tetrachloro-m-xyle		73		40-126	%	09/22/16 22:07
Analytical Method					Prep Method:	
Seq Number:	136036		Matrix:	Ground Water	Date Prep:	09/22/2016
PSS Sample ID:	16092115-004					
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
Decachlorobiphen	yl	77		39-154	%	09/22/16 19:27
Tetrachloro-m-xyle		67		35-131		09/22/16 19:27
Analytical Method	d: SW-846 8151 A				Prep Method:	SW8151A_PREP
Seq Number:	136151		Matrix:	Ground Water	Date Prep:	_
PSS Sample ID:	16092115-004				- r	
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
2,4-Dichloropheny	lacetic Acid	105		64-126	%	09/28/16 00:13
2,4-Dichlolophelly	iaugiiu Auiu	103		04-120	/0	03/20/10 00.13

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Analytical Method Seq Number: PSS Sample ID:	: SW-846 8015 C 136055 16092115-004		Matrix:	Ground Water	Prep Method: Date Prep:	
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
o-Terphenyl		84		46-111	%	09/25/16 23:41
Analytical Method Seq Number: PSS Sample ID:	: SW-846 8270 C 136093 16092115-004		Matrix:	Ground Water	Prep Method: Date Prep:	
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
2-Fluorobiphenyl 2-Fluorophenol Nitrobenzene-d5 Phenol-d6 Terphenyl-D14 2,4,6-Tribromopher	nol	68 67 65 65 91 70		35-107 32-106 34-123 36-111 43-143 26-122	% % %	09/23/16 17:32 09/23/16 17:32 09/23/16 17:32 09/23/16 17:32 09/23/16 17:32 09/23/16 17:32
Analytical Method Seq Number: PSS Sample ID:	: SW-846 8015C 136017 16092115-004		Matrix:	Ground Water	Prep Method: Date Prep:	
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
a,a,a-Trifluorotolue	ne	67		55-114	%	09/22/16 13:42
Analytical Method Seq Number: PSS Sample ID:	: SW-846 8260 B 136066 16092115-004	%Rec	Matrix: Flag	Ground Water	Prep Method: Date Prep: Units	
Surrogate		/01 100	riug	Lillito	Omto	Date
4-Bromofluorobenz Dibromofluorometh Toluene-D8		102 98 100		86-111 91-119 90-117	%	09/23/16 20:57 09/23/16 20:57 09/23/16 20:57
Analytical Method Seq Number: PSS Sample ID:	: SW-846 8081 B 136034 16092115-005		Matrix:	Ground Water	Prep Method: Date Prep:	
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
Decachlorobipheny Tetrachloro-m-xyler		94 87		43-150 40-126		09/26/16 15:07 09/26/16 15:07

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Analytical Method: Seq Number: PSS Sample ID:	: SW-846 8082 A 136036 16092115-005		Matrix:	Ground Water	Prep Method: Date Prep:	
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
Decachlorobiphenyl Tetrachloro-m-xylen		64 96		39-154 35-131	% %	09/22/16 16:33 09/22/16 16:33
Analytical Method: Seq Number: PSS Sample ID:	: SW-846 8151 A 136151 16092115-005		Matrix:	Ground Water	Prep Method: Date Prep:	
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
2,4-Dichlorophenyla	acetic Acid	100		64-126	%	09/28/16 01:52
Analytical Method: Seq Number: PSS Sample ID:	: SW-846 8015 C 136055 16092115-005		Matrix:	Ground Water	Prep Method: Date Prep:	
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
o-Terphenyl		88		46-111	%	09/26/16 00:07
Analytical Method: Seq Number: PSS Sample ID:	: SW-846 8270 C 136093 16092115-005		Matrix:	Ground Water	Prep Method: Date Prep:	
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
2-Fluorobiphenyl 2-Fluorophenol Nitrobenzene-d5 Phenol-d6 Terphenyl-D14 2,4,6-Tribromophen	nol	87 79 81 79 105 92		35-107 32-106 34-123 36-111 43-143 26-122	% % % % %	09/23/16 17:59 09/23/16 17:59 09/23/16 17:59 09/23/16 17:59 09/23/16 17:59 09/23/16 17:59
Analytical Method: Seq Number: PSS Sample ID:	: SW-846 8015C 136017 16092115-005		Matrix:	Ground Water	Prep Method: Date Prep:	
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
a,a,a-Trifluorotoluer	ne	68		55-114	%	09/22/16 14:08

		110	1001110011	Terriniai North		
Analytical Method Seq Number: PSS Sample ID:	: SW-846 8260 B 136140 16092115-005		Matrix:	Ground Water	Prep Method: Date Prep:	
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
4-Bromofluorobenz Dibromofluorometh Toluene-D8		102 91 104		86-111 91-119 90-117	%	09/27/16 15:49 09/27/16 15:49 09/27/16 15:49
Analytical Method Seq Number: PSS Sample ID:	: SW-846 8081 B 136034 16092115-006		Matrix:	Ground Water	Prep Method: Date Prep:	
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
Decachlorobipheny Tetrachloro-m-xyler		91 55		43-150 40-126		09/22/16 21:39 09/22/16 21:39
Analytical Method Seq Number: PSS Sample ID:	: SW-846 8082 A 136036 16092115-006		Matrix:	Ground Water	Prep Method: Date Prep:	
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
Decachlorobipheny Tetrachloro-m-xyler		83 71		39-154 35-131		09/22/16 18:59 09/22/16 18:59
Analytical Method Seq Number: PSS Sample ID:	: SW-846 8151 A 136151 16092115-006		Matrix:	Ground Water	Prep Method: Date Prep:	
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
2,4-Dichlorophenyla	acetic Acid	107		64-126	%	09/27/16 15:00
Analytical Method Seq Number: PSS Sample ID:	: SW-846 8015 C 136055 16092115-006		Matrix:	Ground Water	Prep Method: Date Prep:	
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
o-Terphenyl		79		46-111	%	09/26/16 00:07

Icor Ltd. Robinson Terminal North

			1 (001113011	Terrinia North		
Analytical Method	: SW-846 8270 C				Prep Method:	SW3510C
Seq Number:	136093		Matrix:	Ground Water	Date Prep:	
·			Watix.	Cround Water	Date 1 1cp.	03/21/2010
PSS Sample ID:	16092115-006					
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
2-Fluorobiphenyl		81		35-107	%	09/23/16 18:52
2-Fluorophenol		75		32-106	%	09/23/16 18:52
Nitrobenzene-d5		76		34-123		09/23/16 18:52
Phenol-d6		75		36-111		09/23/16 18:52
Terphenyl-D14		94		43-143		09/23/16 18:52
2,4,6-Tribromopher	nol	83		26-122		09/23/16 18:52
2,4,0 111516111641161	101	00		20 122	70	00/20/10 10.02
Analytical Method	: SW-846 8015C				Prep Method:	
Seq Number:	136017		Matrix:	Ground Water	Date Prep:	09/22/2016
PSS Sample ID:	16092115-006					
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
a,a,a-Trifluorotolue	ne	69		55-114	%	09/22/16 14:33
a,a,a mindorotolao				35 111	70	00/22/10 11.00
Analytical Method					Prep Method:	
Seq Number:	136140		Matrix:	Ground Water	Date Prep:	09/27/2016
PSS Sample ID:	16092115-006					
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
4-Bromofluorobenz	ene	100		86-111	%	09/27/16 17:15
Dibromofluorometh		98		91-119		09/27/16 17:15
Toluene-D8	ano	103		90-117		09/27/16 17:15
relacine Be		100		33 111	70	00/21/10 11:10
Analytical Method	: SW-846 8081 B				Prep Method:	SW3510C
Seg Number:	136034		Matrix:	Ground Water	Date Prep:	09/22/2016
PSS Sample ID:	16092115-007					
Surrogate	10032113-007	%Rec	Flag	Limits	Units	Analysis Date
D		7.4		40.450	0/	
Decachlorobipheny		71		43-150		09/22/16 20:43
Tetrachloro-m-xyler	ne	62		40-126	%	09/22/16 20:43
Analytical Method				0 100	Prep Method:	
Seq Number:	136036		Matrix:	Ground Water	Date Prep:	09/22/2016
PSS Sample ID:	16092115-007					
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
Decachlorobipheny	1	73		39-154	%	09/22/16 17:03
Tetrachloro-m-xyler		64		35-131		09/22/16 17:03
					· -	

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Icor Ltd. **Robinson Terminal North**

			Robinson	Terminal North		
Analytical Method Seq Number: PSS Sample ID:	1: SW-846 8151 A 136151 16092115-007		Matrix:	Ground Water	Prep Method: Date Prep	
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
2,4-Dichlorophenyl	acetic Acid	99		64-126	%	09/27/16 23:08
Analytical Method Seq Number: PSS Sample ID:	I: SW-846 8015 C 136055 16092115-007		Matrix:	Ground Water	Prep Method: Date Prep:	
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
o-Terphenyl		93		46-111	%	09/26/16 00:32
Analytical Method Seq Number: PSS Sample ID:	1: SW-846 8270 C 136093 16092115-007		Matrix:	Ground Water	Prep Method: Date Prep	
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
2-Fluorobiphenyl 2-Fluorophenol Nitrobenzene-d5 Phenol-d6 Terphenyl-D14 2,4,6-Tribromophe	nol	79 75 75 76 99 84		35-107 32-106 34-123 36-111 43-143 26-122	% % % % %	09/23/16 19:46 09/23/16 19:46 09/23/16 19:46 09/23/16 19:46 09/23/16 19:46 09/23/16 19:46
Analytical Method Seq Number: PSS Sample ID:	1: SW-846 8015C 136017 16092115-007		Matrix:	Ground Water	Prep Method: Date Prep:	
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
a,a,a-Trifluorotolue	ene	69		55-114	%	09/22/16 14:58
Analytical Method Seq Number: PSS Sample ID:	1: SW-846 8260 B 136140 16092115-007		Matrix:	Ground Water	Prep Method: Date Prep:	
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
4-Bromofluorobenz Dibromofluorometh Toluene-D8		101 91 108		86-111 91-119 90-117	% % %	09/27/16 17:36 09/27/16 17:36 09/27/16 17:36

F = RPD exceeded the laboratory control limits

X = Recovery of MS, MSD or both outside of QC Criteria

Icor Ltd. Robinson Terminal North

 $\label{eq:Hamiltonian} \begin{array}{l} \mbox{H= Recovery of BS,BSD or both exceeded the laboratory control limits} \\ \mbox{L= Recovery of BS,BSD or both below the laboratory control limits} \end{array}$

QC Summary 16092115

Icor Ltd. Robinson Terminal North

Analytical Method: SW-846 6020 APrep Method:SW3010ASeq Number:136043Matrix: WaterDate Prep:09/22/16

MB Sample Id: 62666-1-BLK LCS Sample Id: 62666-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Analysis Flag Date
Antimony	<5.000	40.00	40.81	102	80-120	ug/L	09/22/16 23:04
Arsenic	<1.000	40.00	43.81	110	80-120	ug/L	09/22/16 23:04
Beryllium	<1.000	40.00	36.08	90	80-120	ug/L	09/22/16 23:04
Cadmium	<1.000	40.00	39.45	99	80-120	ug/L	09/22/16 23:04
Chromium	<1.000	40.00	38.91	97	80-120	ug/L	09/22/16 23:04
Copper	<1.000	40.00	38.60	97	80-120	ug/L	09/22/16 23:04
Lead	<1.000	40.00	41.41	104	80-120	ug/L	09/22/16 23:04
Mercury	<0.2000	1.000	0.9800	98	80-120	ug/L	09/22/16 23:04
Nickel	<1.000	40.00	38.61	97	80-120	ug/L	09/22/16 23:04
Selenium	<1.000	40.00	37.10	93	80-120	ug/L	09/22/16 23:04
Silver	<1.000	40.00	41.30	103	80-120	ug/L	09/22/16 23:04
Thallium	<1.000	40.00	39.23	98	80-120	ug/L	09/22/16 23:04
Zinc	<20.00	200	223.6	112	80-120	ug/L	09/22/16 23:04

 Analytical Method: SW-846 8081 B
 Prep Method: SW3510C

 Seq Number:
 136034
 Matrix: Water
 Date Prep: 09/22/16

 MB Sample Id:
 62668-1-BLK
 LCS Sample Id: 62668-1-BKS
 LCSD Sample Id: 62668-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
alpha-BHC	<0.04000	0.2000	0.2115	106	0.1516	76	57-118	33	20	ug/L	09/22/16 23:31	F
gamma-BHC (Lindane)	<0.04000	0.2000	0.2204	110	0.1587	79	57-120	33	20	ug/L	09/22/16 23:31	F
beta-BHC	<0.04000	0.2000	0.2368	118	0.1639	82	56-113	36	20	ug/L	09/22/16 23:31	HF
delta-BHC	<0.04000	0.2000	0.2052	103	0.1462	73	48-125	34	20	ug/L	09/22/16 23:31	F
Heptachlor	<0.04000	0.2000	0.2140	107	0.1518	76	49-127	34	20	ug/L	09/22/16 23:31	F
Aldrin	<0.04000	0.2000	0.1994	100	0.1425	71	57-119	33	20	ug/L	09/22/16 23:31	F
Heptachlor epoxide	<0.04000	0.2000	0.2057	103	0.1470	74	62-116	33	20	ug/L	09/22/16 23:31	F
gamma-Chlordane	<0.04000	0.2000	0.2158	108	0.1540	77	59-116	33	20	ug/L	09/22/16 23:31	F
alpha-Chlordane	<0.04000	0.2000	0.1913	96	0.1367	68	68-109	33	20	ug/L	09/22/16 23:31	F
4,4-DDE	<0.04000	0.2000	0.2047	102	0.1446	72	49-122	34	20	ug/L	09/22/16 23:31	F
Endosulfan I	<0.04000	0.2000	0.2165	108	0.1545	77	71-108	33	20	ug/L	09/22/16 23:31	F
Dieldrin	<0.04000	0.2000	0.2586	129	0.1789	89	60-117	36	20	ug/L	09/22/16 23:31	HF
Endrin	<0.04000	0.2000	0.2425	121	0.1697	85	48-132	35	20	ug/L	09/22/16 23:31	F
4,4-DDD	<0.04000	0.2000	0.2256	113	0.1609	80	48-128	33	20	ug/L	09/22/16 23:31	F
Endosulfan II	< 0.04000	0.2000	0.2161	108	0.1529	76	59-118	34	20	ug/L	09/22/16 23:31	F
4,4-DDT	< 0.04000	0.2000	0.2394	120	0.1654	83	29-147	37	20	ug/L	09/22/16 23:31	F
Endrin aldehyde	<0.04000	0.2000	0.2044	102	0.1472	74	54-122	33	20	ug/L	09/22/16 23:31	F
Methoxychlor	<0.04000	0.2000	0.2237	112	0.1560	78	26-156	36	20	ug/L	09/22/16 23:31	F
Endosulfan sulfate	<0.04000	0.2000	0.2309	115	0.1624	81	57-130	35	20	ug/L	09/22/16 23:31	F
Endrin ketone	<0.04000	0.2000	0.2451	123	0.1721	86	55-123	35	20	ug/L	09/22/16 23:31	F

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units	Analysis Date	
Decachlorobiphenyl	91		102		72		43-150	%	09/22/16 23:31	
Tetrachloro-m-xylene	85		102		74		40-126	%	09/22/16 23:31	

QC Summary 16092115

Icor Ltd. Robinson Terminal North

Analytical Method:	: SW-846 8082 A			Prep Method:	SW3510C
Seq Number:	136036	Matrix:	Water	Date Prep:	09/22/16
MB Sample Id:	62667-1-BLK	LCS Sample Id:	62667-1-BKS	LCSD Sample Id:	62667-1-BSD

•				-					-			
Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
PCB-1016	< 0.5000	5.000	3.528	71	3.670	73	56-124	4	20	ug/L	09/22/16 15:35	
PCB-1260	< 0.5000	5.000	4.403	88	4.490	90	61-103	2	20	ug/L	09/22/16 15:35	
Surrogate	MB %Rec	MB Flag	_		LCS Flag	LCS Resu			imits	Units	Analysis Date	
Decachlorobiphenyl	77		8	34		85		39	9-154	%	09/22/16 15:35	;

76

35-131

09/22/16 15:35

Analytical Method: SW-846 8151 A Prep Method: SW8151A_PREP

 Seq Number:
 136151
 Matrix:
 Water
 Date Prep:
 09/26/16

 MB Sample Id:
 62706-1-BLK
 LCS Sample Id:
 62706-1-BKS
 LCSD Sample Id:
 62706-1-BSD

75

Tetrachloro-m-xylene

74

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Dalapon	<4.550	13.65	10.59	78	7.758	57	33-127	31	20	ug/L	09/27/16 13:56	F
Dicamba	<0.1880	0.5640	0.6157	109	0.5659	100	66-121	8	20	ug/L	09/27/16 13:56	
MCPP	<188	564	425.8	75	423.2	75	49-121	1	20	ug/L	09/27/16 13:56	
MCPA	<186	558	422.7	76	420.5	75	50-123	1	20	ug/L	09/27/16 13:56	
Dichloroprop	<1.880	5.640	5.769	102	5.750	102	79-132	0	20	ug/L	09/27/16 13:56	
2,4-D	<1.880	5.640	5.772	102	5.691	101	70-104	1	20	ug/L	09/27/16 13:56	
2,4,5-TP (Silvex)	<0.1900	0.5700	0.5007	88	0.4997	88	59-122	0	20	ug/L	09/27/16 13:56	
2,4,5-T	<0.1900	0.5700	0.4826	85	0.4665	82	49-136	3	20	ug/L	09/27/16 13:56	
Dinoseb	<0.9500	2.850	2.138	75	2.026	71	48-110	5	20	ug/L	09/27/16 13:56	
2,4-DB	<1.920	5.760	5.341	93	4.728	82	49-128	12	20	ug/L	09/27/16 13:56	
Surrogate	MB %Rec	MB Flag	· ·	.CS esult	LCS Flag	LCS Resu			mits	Units	Analysis Date	
2,4-Dichlorophenylacetic Acid	106		1	01		108	3	64	l-126	%	09/27/16 13:56	3

 Analytical Method: SW-846 8015 C
 Prep Method: SW3510C

 Seq Number:
 136055
 Matrix: Water
 Date Prep: 09/23/16

 MB Sample Id:
 62675-1-BLK
 LCS Sample Id: 62675-1-BKS
 LCSD Sample Id: 62675-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
TPH-DRO (Diesel Range Organics)	<0.1000	1.000	0.8225	82	0.8037	80	41-123	2	20	mg/L	09/23/16 11:50	
Surrogate	MB %Rec	MB Flag	_	CS sult	LCS Flag	LCS Resu			mits	Units	Analysis Date	
o-Terphenyl	92		-	79		75		46	S-111	%	09/23/16 11:50)

QC Summary 16092115

Icor Ltd. Robinson Terminal North

 Analytical Method: SW-846 8270 C
 Prep Method: SW3510C

 Seq Number:
 136050
 Matrix: Water
 Date Prep: 09/21/16

 MB Sample Id:
 62636-1-BLK
 LCS Sample Id: 62636-1-BKS
 LCSD Sample Id: 62636-1-BSD

MB Sample Id:	52636-1-BLK		LCS San	nple Id:	62636-1-	BKS		LCSD	Sample	e ld: 626	836-1-BSD	
Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Acenaphthene	<5.000	40.00	36.35	91	33.93	85	67-110	7	20	ug/L	09/21/16 22:27	•
Acenaphthylene	<5.000	40.00	37.71	94	36.09	90	69-106	4	20	ug/L	09/21/16 22:27	•
Acetophenone	<5.000	40.00	34.68	87	32.89	82	67-107	5	20	ug/L	09/21/16 22:27	•
Anthracene	<5.000	40.00	38.11	95	35.28	88	79-108	8	20	ug/L	09/21/16 22:27	•
Atrazine	<5.000	40.00	26.51	66	25.33	63	17-98	5	20	ug/L	09/21/16 22:27	•
Benzo(a)anthracene	<5.000	40.00	37.58	94	35.19	88	76-109	7	20	ug/L	09/21/16 22:27	•
Benzo(a)pyrene	<5.000	40.00	40.13	100	37.49	94	76-114	7	20	ug/L	09/21/16 22:27	•
Benzo(b)fluoranthene	<5.000	40.00	41.56	104	38.74	97	67-121	7	20	ug/L	09/21/16 22:27	
Benzo(g,h,i)perylene	<5.000	40.00	41.13	103	33.86	85	75-107	19	20	ug/L	09/21/16 22:27	•
Benzo(k)fluoranthene	<5.000	40.00	40.07	100	37.85	95	62-132	6	20	ug/L	09/21/16 22:27	•
Biphenyl (Diphenyl)	<5.000	40.00	35.38	88	32.74	82	71-108	8	20	ug/L	09/21/16 22:27	•
Butyl benzyl phthalate	<5.000	40.00	43.65	109	39.07	98	74-117	11	20	ug/L	09/21/16 22:27	•
bis(2-chloroethoxy) met	hane <5.000	40.00	33.66	84	31.72	79	69-111	6	20	ug/L	09/21/16 22:27	•
bis(2-chloroethyl) ether	<5.000	40.00	32.12	80	30.72	77	62-103	4	20	ug/L	09/21/16 22:27	•
bis(2-chloroisopropyl) e	ther <5.000	40.00	30.55	76	29.10	73	50-103	5	20	ug/L	09/21/16 22:27	•
bis(2-ethylhexyl) phthala	ate <5.000	40.00	43.72	109	37.93	95	78-114	14	20	ug/L	09/21/16 22:27	,
4-Bromophenylphenyl e	ther <5.000	40.00	36.00	90	32.98	82	82-108	9	20	ug/L	09/21/16 22:27	,
Di-n-butyl phthalate	<5.000	40.00	41.51	104	37.76	94	71-115	9	20	ug/L	09/21/16 22:27	,
Carbazole	<5.000	40.00	38.08	95	35.55	89	52-134	7	20	ug/L	09/21/16 22:27	,
Caprolactam	<5.000	40.00	36.68	92	34.37	86	50-125	7	20	ug/L	09/21/16 22:27	,
4-Chloro-3-methyl phen	ol <5.000	40.00	37.96	95	35.48	89	72-121	7	20	ug/L	09/21/16 22:27	
4-Chloroaniline	<5.000	40.00	33.88	85	31.95	80	54-103	6	20	ug/L	09/21/16 22:27	,
2-Chloronaphthalene	<5.000	40.00	35.58	89	33.69	84	66-105	5	20	ug/L	09/21/16 22:27	,
2-Chlorophenol	<5.000	40.00	33.65	84	32.61	82	63-109	3	20	ug/L	09/21/16 22:27	,
4-Chlorophenyl Phenyl	ether <5.000	40.00	34.46	86	32.56	81	73-100	6	20	ug/L	09/21/16 22:27	,
Chrysene	<5.000	40.00	37.14	93	35.17	88	78-111	5	20	ug/L	09/21/16 22:27	,
Dibenz(a,h)Anthracene	<5.000	40.00	41.51	104	35.58	89	76-106	15	20	ug/L	09/21/16 22:27	,
Dibenzofuran	<5.000	40.00	35.86	90	33.95	85	70-111	5	20	ug/L	09/21/16 22:27	,
3,3-Dichlorobenzidine	<5.000	40.00	51.17	128	48.56	121	79-132	5	20	ug/L	09/21/16 22:27	,
2,4-Dichlorophenol	<5.000	40.00	36.86	92	35.01	88	65-118	5	20	ug/L	09/21/16 22:27	,
Diethyl phthalate	<5.000	40.00	38.86	97	36.22	91	60-114	7	20	ug/L	09/21/16 22:27	,
Dimethyl phthalate	<5.000	40.00	37.49	94	35.08	88	66-107	7	20	ug/L	09/21/16 22:27	,
2,4-Dimethylphenol	<5.000	40.00	37.11	93	34.17	85	60-119	8	20	ug/L	09/21/16 22:27	,
4,6-Dinitro-2-methyl phe	enol <5.000	40.00	30.71	77	31.16	78	60-130	1	20	ug/L	09/21/16 22:27	,
2,4-Dinitrophenol	<10.00	40.00	19.10	48	21.91	55	36-136	14	20	ug/L	09/21/16 22:27	•
2,4-Dinitrotoluene	<5.000	40.00	35.66	89	33.88	85	70-119	5	20	ug/L	09/21/16 22:27	•
2,6-Dinitrotoluene	<5.000	40.00	37.68	94	34.98	87	68-117	7	20	ug/L	09/21/16 22:27	•
Fluoranthene	<5.000	40.00	38.27	96	36.15	90	79-112	6	20	ug/L	09/21/16 22:27	•
Fluorene	<5.000	40.00	37.90	95	35.62	89	71-109	6	20	ug/L	09/21/16 22:27	,
Hexachlorobenzene	<5.000	40.00	35.52	89	32.46	81	76-110	9	20	ug/L	09/21/16 22:27	•
Hexachlorobutadiene	<5.000	40.00	33.65	84	31.57	79	64-113	6	20	ug/L	09/21/16 22:27	,
Hexachlorocyclopentad	iene <5.000	40.00	32.78	82	34.25	86	49-124	4	20	ug/L	09/21/16 22:27	,
Hexachloroethane	<5.000	40.00	33.10	83	31.55	79	62-105	5	20	ug/L	09/21/16 22:27	•
Indeno(1,2,3-c,d)Pyrene	e <5.000	40.00	43.46	109	37.19	93	69-120	16	20	ug/L	09/21/16 22:27	•
Isophorone	<5.000		36.92	92	34.69	87	68-108	6	20	ug/L	09/21/16 22:27	,
2-Methylnaphthalene	<5.000	40.00	37.20	93	34.88	87	64-117	6	20	ug/L	09/21/16 22:27	•
2-Methyl phenol	<5.000	40.00	35.67	89	34.38	86	67-111	4	20	ug/L	09/21/16 22:27	,
3&4-Methylphenol	<5.000	40.00	35.57	89	34.03	85	67-107	4	20	ug/L	09/21/16 22:27	•
Naphthalene	<5.000	40.00	34.12	85	31.98	80	65-103	6	20	ug/L	09/21/16 22:27	•
2-Nitroaniline	<5.000	40.00	35.13	88	33.03	83	59-114	6	20	ug/L	09/21/16 22:27	•
3-Nitroaniline	<5.000	40.00	35.56	89	34.77	87	60-109	2	20	ug/L	09/21/16 22:27	

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QC Summary 16092115

Icor Ltd. Robinson Terminal North

,														
Seq Number:	136050				Matrix:	Water				Date Pre	ep: 09/	21/16		
MB Sample Id:	MB Sample Id: 62636-1-BLK				nple ld:	62636-1	BKS	LCSD Sample Id: 62636-1-BSD						
Parameter		MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag	
4-Nitroaniline		<5.000	40.00	37.27	93	36.70	92	51-125	2	20	ug/L	09/21/16 22:27	7	
Nitrobenzene		<5.000	40.00	31.34	78	29.81	75	60-107	5	20	ug/L	09/21/16 22:27	7	
2-Nitrophenol		<5.000	40.00	35.93	90	34.42	86	65-119	4	20	ug/L	09/21/16 22:27	7	
4-Nitrophenol		<5.000	40.00	35.50	89	35.06	88	46-121	1	20	ug/L	09/21/16 22:27	7	
N-Nitrosodi-n-propyl an	nine	<5.000	40.00	35.09	88	33.68	84	60-98	4	20	ug/L	09/21/16 22:27	7	
N-Nitrosodiphenylamin	e	<5.000	40.00	38.32	96	35.53	89	68-106	8	20	ua/l	09/21/16 22:23	7	

N-Nitrosodiphenylamine	<5.000	40.00	38.32	96	35.53	89	68-106	8	20	ug/L	09/21/16 22:27
Di-n-octyl phthalate	<5.000	40.00	40.47	101	37.02	93	69-120	9	20	ug/L	09/21/16 22:27
Pentachlorophenol	<5.000	40.00	35.06	88	33.77	84	63-119	4	20	ug/L	09/21/16 22:27
Phenanthrene	<5.000	40.00	37.71	94	34.68	87	73-109	8	20	ug/L	09/21/16 22:27
Phenol	<5.000	40.00	33.18	83	32.22	81	65-110	3	20	ug/L	09/21/16 22:27
Pyrene	<5.000	40.00	36.89	92	33.54	84	78-111	10	20	ug/L	09/21/16 22:27
Pyridine	<5.000	40.00	29.39	73	28.42	71	47-105	3	20	ug/L	09/21/16 22:27
2,4,5-Trichlorophenol	<5.000	40.00	39.55	99	37.43	94	69-114	6	20	ug/L	09/21/16 22:27
2,4,6-Trichlorophenol	<5.000	40.00	36.98	92	34.83	87	68-118	6	20	ug/L	09/21/16 22:27

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units	Analysis Date
2-Fluorobiphenyl	83		80		74		35-107	%	09/21/16 22:27
2-Fluorophenol	90		78		72		32-106	%	09/21/16 22:27
Nitrobenzene-d5	87		83		75		34-123	%	09/21/16 22:27
Phenol-d6	84		79		74		36-111	%	09/21/16 22:27
Terphenyl-D14	101		90		81		43-143	%	09/21/16 22:27
2,4,6-Tribromophenol	74		87		78		26-122	%	09/21/16 22:27

Analytical Method: SW-846 8015C Prep Method: SW5030B Seq Number: 136017 Matrix: Water Date Prep: 09/22/16

MB Sample Id: 62674-2-BLK LCS Sample Id: 62674-2-BKS

Analytical Method: SW-846 8270 C

Parameter	MB Result	Spike Amount	LCS Result	LCS %Red		Limits		Units	Analysis Date	Flag
TPH-GRO (Gasoline Range Organic:	<100	5000	5308	10	6	74-132		ug/L	09/22/16 12:00	
Surrogate	MB %Rec	MB Flag		.CS sult	LCS Flag		Limits	Units	Analysis Date	
a a a-Trifluorotoluene	68		-	77			55-114	%	09/22/16 12:00)

Analytical Method: SW-846 8015CPrep Method:SW5030BSeq Number:136017Matrix:Ground WaterDate Prep:09/22/16

Parent Sample Id: 16092115-001 MS Sample Id: 16092115-001 S MSD Sample Id: 16092115-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
TPH-GRO (Gasoline Range Organic:	<100	5000	5151	103	4923	98	49-137	5	25	ug/L	09/22/16 11:09	
Surrogate			_!	MS	MS	MSI) MSI		mits	Units	Analysis	

 Result
 Flag
 Result
 Flag
 Date

 a,a,a-Trifluorotoluene
 76
 77
 55-114
 %
 09/22/16 11:09

Prep Method: SW3510C

QC Summary 16092115

Icor Ltd. Robinson Terminal North

Analytical Method: SW-846 8260 BPrep Method: SW5030BSeq Number:136066Matrix: WaterDate Prep: 09/23/16

MB Sample Id: LCS Sample Id: 62702-1-BKS 62702-1-BLK LCS MB Spike LCS Limits Units **Analysis Parameter** Flag Result **Amount** Result %Rec Date Acetone <10.00 50.00 41.80 84 29-149 ug/L 09/23/16 10:07 Benzene <1.000 50.00 55.88 112 85-123 ug/L 09/23/16 10:07 Bromochloromethane <1.000 50.00 50.65 101 82-136 ug/L 09/23/16 10:07 Bromodichloromethane <1.000 50.00 58.89 118 88-133 ug/L 09/23/16 10:07 Bromoform < 5.000 50.00 51.25 103 80-126 ug/L 09/23/16 10:07 ug/L Bromomethane <1.000 50.00 46.79 94 64-139 09/23/16 10:07 2-Butanone (MEK) <10.00 50.00 34.25 69 39-135 ug/L 09/23/16 10:07 Carbon Disulfide <10.00 50.00 62.27 125 85-124 ug/L 09/23/16 10:07 Н Carbon Tetrachloride <1.000 50.00 52.13 104 81-138 ug/L 09/23/16 10:07 Chlorobenzene <1.000 50.00 56.83 114 85-120 ug/L 09/23/16 10:07 ug/L 50.00 Chloroethane <1.000 56.56 113 75-129 09/23/16 10:07 Chloroform <1.000 50.00 50.68 101 85-128 ug/L 09/23/16 10:07 Chloromethane <1.000 50.00 52.24 104 60-139 ug/L 09/23/16 10:07 Cvclohexane <10.00 50.00 58.42 117 55-131 ug/L 09/23/16 10:07 ug/L 1,2-Dibromo-3-Chloropropane <10.00 50.00 50.13 100 69-127 09/23/16 10:07 52.03 Dibromochloromethane < 1.000 50.00 104 82-127 ug/L 09/23/16 10:07 1,2-Dibromoethane (EDB) <1.000 50.00 57.81 116 82-121 ug/L 09/23/16 10:07 1,2-Dichlorobenzene <1.000 50.00 59.15 118 82-123 ug/L 09/23/16 10:07 58.94 <1.000 50.00 118 81-123 ug/L 09/23/16 10:07 1,3-Dichlorobenzene 50.00 58.28 1,4-Dichlorobenzene <1.000 117 81-121 ug/L 09/23/16 10:07 Dichlorodifluoromethane <1.000 50.00 64.11 128 69-147 ug/L 09/23/16 10:07 1,1-Dichloroethane <1.000 50.00 57.19 114 83-123 ug/L 09/23/16 10:07 <1.000 50.00 55.15 110 86-138 ug/L 1,2-Dichloroethane 09/23/16 10:07 50.00 61.88 ug/L 1,1-Dichloroethene <1.000 124 85-127 09/23/16 10:07 cis-1,2-Dichloroethene <1.000 50.00 56.98 114 87-127 ug/L 09/23/16 10:07 1,2-Dichloropropane <1.000 50.00 57.34 115 79-125 ug/L 09/23/16 10:07 <1.000 50.00 54.36 109 79-131 09/23/16 10:07 cis-1,3-Dichloropropene ug/L 50.00 trans-1,3-Dichloropropene <1.000 53.89 108 82-133 ug/L 09/23/16 10:07 trans-1,2-Dichloroethene <1.000 50.00 57.47 115 85-125 ug/L 09/23/16 10:07 58.74 Ethylbenzene <1.000 50.00 117 83-123 ug/L 09/23/16 10:07 ug/L <10.00 50.00 40.02 80 37-137 09/23/16 10:07 2-Hexanone 55.43 Isopropylbenzene <1.000 50.00 111 70-131 ug/L 09/23/16 10:07 Methyl Acetate <10.00 50.00 54.51 109 69-127 ug/L 09/23/16 10:07 Methylcyclohexane <10.00 50.00 61.52 123 75-129 ug/L 09/23/16 10:07 <1.000 50.00 59.20 86-124 Methylene Chloride 118 ug/L 09/23/16 10:07 39.98 4-Methyl-2-Pentanone < 5.000 50.00 80 39-143 ug/L 09/23/16 10:07 Methyl-t-butyl ether <1.000 50.00 47.41 95 75-134 ug/L 09/23/16 10:07 Naphthalene <1.000 50.00 50.41 101 61-118 ug/L 09/23/16 10:07 50.00 104 ug/L Styrene <1.000 52.03 80-120 09/23/16 10:07 1,1,2,2-Tetrachloroethane <1.000 50.00 58.34 64-125 ug/L 117 09/23/16 10:07 Tetrachloroethene <1.000 50.00 58.99 118 83-138 ug/L 09/23/16 10:07 Toluene <1.000 50.00 58.18 116 88-126 ug/L 09/23/16 10:07 1.2.3-Trichlorobenzene <1.000 50.00 51.75 104 75-124 ug/L 09/23/16 10:07 <1.000 50.00 60.03 120 ug/L 1,2,4-Trichlorobenzene 77-131 09/23/16 10:07 1,1,1-Trichloroethane <1.000 50.00 57.65 115 68-146 ug/L 09/23/16 10:07 1,1,2-Trichloroethane <1.000 50.00 58.87 85-124 ug/L 09/23/16 10:07 118 Trichloroethene <1.000 50.00 57.47 115 87-127 ug/L 09/23/16 10:07 ug/L <5.000 50.00 61.08 122 77-147 09/23/16 10:07 Trichlorofluoromethane 1,1,2-Trichloro-1,2,2-Trifluoroethane 68-135 <1.000 50.00 64.70 129 ug/L 09/23/16 10:07 Vinyl Chloride <1.000 50.00 57.57 74-138 ug/L 09/23/16 10:07 115 < 2.000 100 101.1 101 84-124 ug/L 09/23/16 10:07 m,p-Xylenes

QC Summary 16092115

Icor Ltd. Robinson Terminal North

Analytical Method: SW-846 8260 BPrep Method:SW5030BSeq Number:136066Matrix: WaterDate Prep:09/23/16

101

MB Sample Id: 62702-1-BLK LCS Sample Id: 62702-1-BKS

103

Toluene-D8

MB Campic ia.	OZTOZ I DEK				. 02.02 . 2.10					
Parameter	MB Result	Spike Amount	LCS Result	LCS %Red		Limits		Units	Analysis Date	Flag
o-Xylene	<1.000	50.00	52.80	100	6	79-126		ug/L	09/23/16 10:07	
Surrogate	MB %Red	MB Flag	_	.CS sult	LCS Flag		Limits	Units	Analysis Date	
4-Bromofluorobenzene	e 100		1	00			86-111	%	09/23/16 10:07	
Dibromofluoromethane	e 98		9	99			91-119	%	09/23/16 10:07	

90-117

09/23/16 10:07

Icor Ltd. Robinson Terminal North

Analytical Method: SW-846 8260 B Prep Method: SW5030B Seq Number: 136140 Matrix: Water Date Prep: 09/27/16

MB Sample Id:

62733-1-BLK

LCS Sample Id: 62733-1-BKS

Wib Sample Id. 02755-1	-DLIX		LOO Oan	ipic ia.	02700 T BIXO			
Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Analysis Date	Flag
Acetone	<10.00	50.00	44.67	89	29-149	ug/L	09/27/16 12:15	
Benzene	<1.000	50.00	55.39	111	85-123	ug/L	09/27/16 12:15	
Bromochloromethane	<1.000	50.00	42.37	85	82-136	ug/L	09/27/16 12:15	
Bromodichloromethane	<1.000	50.00	56.39	113	88-133	ug/L	09/27/16 12:15	
Bromoform	<5.000	50.00	48.50	97	80-126	ug/L	09/27/16 12:15	
Bromomethane	<1.000	50.00	49.92	100	64-139	ug/L	09/27/16 12:15	
2-Butanone (MEK)	<10.00	50.00	28.86	58	39-135	ug/L	09/27/16 12:15	
Carbon Disulfide	<10.00	50.00	50.32	101	85-124	ug/L	09/27/16 12:15	
Carbon Tetrachloride	<1.000	50.00	50.60	101	81-138	ug/L	09/27/16 12:15	
Chlorobenzene	<1.000	50.00	55.13	110	85-120	ug/L	09/27/16 12:15	
Chloroethane	<1.000	50.00	57.19	114	75-129	ug/L	09/27/16 12:15	
Chloroform	<1.000	50.00	41.04	82	85-128	ug/L	09/27/16 12:15	L
Chloromethane	<1.000	50.00	52.63	105	60-139	ug/L	09/27/16 12:15	
Cyclohexane	<10.00	50.00	56.41	113	55-131	ug/L	09/27/16 12:15	
1,2-Dibromo-3-Chloropropane	<10.00	50.00	45.28	91	69-127	ug/L	09/27/16 12:15	
Dibromochloromethane	<1.000	50.00	50.56	101	82-127	ug/L	09/27/16 12:15	
1,2-Dibromoethane (EDB)	<1.000	50.00	55.62	111	82-121	ug/L	09/27/16 12:15	
1,2-Dichlorobenzene	<1.000	50.00	56.73	113	82-123	ug/L	09/27/16 12:15	
1,3-Dichlorobenzene	<1.000	50.00	55.85	112	81-123	ug/L	09/27/16 12:15	
1,4-Dichlorobenzene	<1.000	50.00	55.35	111	81-121	ug/L	09/27/16 12:15	
Dichlorodifluoromethane	<1.000	50.00	62.60	125	69-147	ug/L	09/27/16 12:15	
1,1-Dichloroethane	<1.000	50.00	40.82	82	83-123	ug/L	09/27/16 12:15	L
1,2-Dichloroethane	<1.000	50.00	54.08	108	86-138	ug/L	09/27/16 12:15	
1,1-Dichloroethene	<1.000	50.00	59.42	119	85-127	ug/L	09/27/16 12:15	
cis-1,2-Dichloroethene	<1.000	50.00	44.72	89	87-127	ug/L	09/27/16 12:15	
1,2-Dichloropropane	<1.000	50.00	55.84	112	79-125	ug/L	09/27/16 12:15	
cis-1,3-Dichloropropene	<1.000	50.00	53.35	107	79-131	ug/L	09/27/16 12:15	
trans-1,3-Dichloropropene	<1.000	50.00	53.97	108	82-133	ug/L	09/27/16 12:15	
trans-1,2-Dichloroethene	<1.000	50.00	42.88	86	85-125	ug/L	09/27/16 12:15	
Ethylbenzene	<1.000	50.00	58.16	116	83-123	ug/L	09/27/16 12:15	
2-Hexanone	<10.00	50.00	45.02	90	37-137	ug/L	09/27/16 12:15	
Isopropylbenzene	<1.000	50.00	53.03	106	70-131	ug/L	09/27/16 12:15	
Methyl Acetate	<10.00	50.00	44.65	89	69-127	ug/L	09/27/16 12:15	
Methylcyclohexane	<10.00	50.00	59.89	120	75-129	ug/L	09/27/16 12:15	
Methylene Chloride	<1.000	50.00	48.73	97	86-124	ug/L	09/27/16 12:15	
4-Methyl-2-Pentanone	<5.000	50.00	44.59	89	39-143	ug/L	09/27/16 12:15	
Methyl-t-butyl ether	<1.000	50.00	38.03	76	75-134	ug/L	09/27/16 12:15	
Naphthalene	<1.000	50.00	48.16	96	61-118	ug/L	09/27/16 12:15	
Styrene	<1.000	50.00	49.71	99	80-120	ug/L	09/27/16 12:15	
1,1,2,2-Tetrachloroethane	<1.000	50.00	54.75	110	64-125	ug/L	09/27/16 12:15	
Tetrachloroethene	<1.000	50.00	59.72	119	83-138	ug/L	09/27/16 12:15	
Toluene	<1.000	50.00	58.42	117	88-126	ug/L	09/27/16 12:15	
1,2,3-Trichlorobenzene	<1.000	50.00	49.83	100	75-124	ug/L	09/27/16 12:15	
1,2,4-Trichlorobenzene	<1.000	50.00	58.26	117	77-131	ug/L	09/27/16 12:15	
1,1,1-Trichloroethane	<1.000	50.00	56.66	113	68-146	ug/L	09/27/16 12:15	
1,1,2-Trichloroethane	<1.000	50.00	56.79	114	85-124	ug/L	09/27/16 12:15	
Trichloroethene	<1.000	50.00	56.04	112	87-127	ug/L	09/27/16 12:15	
Trichlorofluoromethane	<5.000	50.00	57.82	116	77-147	ug/L	09/27/16 12:15	
1,1,2-Trichloro-1,2,2-Trifluoroethane	<1.000	50.00	61.19	122	68-135	ug/L	09/27/16 12:15	
Vinyl Chloride	<1.000	50.00	57.14	114	74-138	ug/L	09/27/16 12:15	
m,p-Xylenes	<2.000	100	97.57	98	84-124	ug/L	09/27/16 12:15	

PHASE SEPARATION SCIENCE, INC.

QC Summary 16092115

Icor Ltd. Robinson Terminal North

Analytical Method: SW-846 8260 BPrep Method:SW5030BSeq Number:136140Matrix: WaterDate Prep:09/27/16

MB Sample Id: 62733-1-BLK LCS Sample Id: 62733-1-BKS

LCS LCS Limits Units MB **Spike Analysis Parameter** Flag Result %Rec Date Result Amount o-Xylene <1.000 50.00 50.82 102 79-126 ug/L 09/27/16 12:15 MB MB LCS **LCS** Limits Units **Analysis** Surrogate Flag Result Flag Date %Rec 4-Bromofluorobenzene 102 100 86-111 % 09/27/16 12:15 Dibromofluoromethane 99 99 91-119 % 09/27/16 12:15 Toluene-D8 105 103 90-117 % 09/27/16 12:15

Analytical Method: SW-846 8260 B
Seq Number: 136153
Matrix: Water
Prep Method: SW5030B
Date Prep: 09/28/16

MB Sample Id: 62744-1-BLK

Parameter MB LOD RL Units Analysis Flag
Result Date

Naphthalene ND 0.5000 1.000 ug/L 09/28/16 12:29

PHASE SEPARATION SCIENCE, INC.

QC Summary 16092115

Icor Ltd. Robinson Terminal North

Analytical Method: SW-846 8260 BPrep Method:SW5030BSeq Number:136140Matrix: Ground WaterDate Prep:09/27/16

Parent Sample Id: 16092115-005 MS Sample Id: 16092115-005 S MSD Sample Id: 16092115-005 SD

Parent Sample Id: 1609211	5-005		IVIO Sali	ipie iu.	1009211	J-005 S		IVIOD	Sample	iu. Toc	192 1 13-003 SL	,
Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Acetone	<10.00	50.00	48.93	98	42.03	84	46-138	15	25	ug/L	09/27/16 16:10)
Benzene	<1.000	50.00	50.00	100	49.36	99	77-126	1	25	ug/L	09/27/16 16:10)
Bromochloromethane	<1.000	50.00	42.48	85	43.76	88	74-133	3	25	ug/L	09/27/16 16:10)
Bromodichloromethane	<1.000	50.00	51.70	103	49.35	99	79-130	5	25	ug/L	09/27/16 16:10)
Bromoform	<5.000	50.00	40.90	82	41.90	84	69-120	2	25	ug/L	09/27/16 16:10)
Bromomethane	<1.000	50.00	24.64	49	20.26	41	64-130	20	25	ug/L	09/27/16 16:10) X
2-Butanone (MEK)	<10.00	50.00	42.55	85	42.51	85	34-126	0	25	ug/L	09/27/16 16:10)
Carbon Disulfide	<10.00	50.00	40.54	81	45.53	91	76-126	12	25	ug/L	09/27/16 16:10)
Carbon Tetrachloride	<1.000	50.00	46.11	92	45.46	91	77-137	1	25	ug/L	09/27/16 16:10)
Chlorobenzene	<1.000	50.00	49.56	99	48.08	96	74-120	3	25	ug/L	09/27/16 16:10)
Chloroethane	<1.000	50.00	83.32	167	63.79	128	68-133	27	25	ug/L	09/27/16 16:10	XF
Chloroform	<1.000	50.00	42.45	85	42.92	86	77-127	1	25	ug/L	09/27/16 16:10)
Chloromethane	<1.000	50.00	49.67	99	45.21	90	50-143	9	25	ug/L	09/27/16 16:10	
Cyclohexane	<10.00	50.00	50.55	101	49.80	100	53-139	1	25	ug/L	09/27/16 16:10	
1,2-Dibromo-3-Chloropropane	<10.00	50.00	43.61	87	46.28	93	56-123	6	25	ug/L	09/27/16 16:10)
Dibromochloromethane	<1.000	50.00	43.57	87	43.89	88	70-125	1	25	ug/L	09/27/16 16:10	
1,2-Dibromoethane (EDB)	<1.000	50.00	51.43	103	51.24	102	69-121	0	25	ug/L	09/27/16 16:10	
1,2-Dichlorobenzene	<1.000	50.00	50.58	101	50.95	102	69-118	1	25	ug/L	09/27/16 16:10	
1,3-Dichlorobenzene	<1.000	50.00	50.31	101	50.16	100	68-119	0	25	ug/L	09/27/16 16:10	
1,4-Dichlorobenzene	<1.000	50.00	48.86	98	49.03	98	67-117	0	25	ug/L	09/27/16 16:10	
Dichlorodifluoromethane	<1.000	50.00	53.15	106	50.35	101	68-139	5	25	ug/L	09/27/16 16:10	
1.1-Dichloroethane	<1.000	50.00	47.59	95	46.43	93	78-126	2	25	ug/L	09/27/16 16:10	
1,2-Dichloroethane	<1.000	50.00	46.89	94	47.54	95	78-134	1	25	ug/L	09/27/16 16:10	
1,1-Dichloroethene	<1.000	50.00	42.51	85	48.10	96	78-125	12	25	ug/L	09/27/16 16:10	
cis-1,2-Dichloroethene	<1.000	50.00	48.12	96	48.87	98	78-128	2	25	ug/L	09/27/16 16:10	
1,2-Dichloropropane	<1.000	50.00	51.04	102	49.18	98	73-126	4	25	ug/L	09/27/16 16:10	
cis-1,3-Dichloropropene	<1.000	50.00	46.80	94	44.98	90	67-126	4	25	ug/L	09/27/16 16:10	
trans-1,3-Dichloropropene	<1.000	50.00	45.63	91	44.39	89	68-129	3	25	ug/L	09/27/16 16:10	
trans-1,2-Dichloroethene	<1.000	50.00	47.79	96	47.12	94	76-128	1	25	ug/L	09/27/16 16:10	
Ethylbenzene	<1.000	50.00	51.89	104	49.97	100	74-123	4	25	ug/L	09/27/16 16:10	
2-Hexanone	<10.00	50.00	56.15	112	56.53	113	38-125	1	25	ug/L	09/27/16 16:10	
Isopropylbenzene	<1.000	50.00	45.52	91	47.04	94	58-129	3	25	ug/L	09/27/16 16:10	
Methyl Acetate	<10.00	50.00	33.02	66	37.29	75	63-115	12	25	ug/L	09/27/16 16:10	
Methylcyclohexane	<10.00	50.00	54.37	109	50.74	101	69-130	7	25	ug/L	09/27/16 16:10	
Methylene Chloride	<1.000	50.00	37.04	74	41.54	83	76-124	11	25	ug/L	09/27/16 16:10	
4-Methyl-2-Pentanone	<5.000	50.00	54.41	109	54.39	109	35-123	0	25	ug/L	09/27/16 16:10	
Methyl-t-butyl ether	<1.000	50.00	39.54	79	39.66	79	64-129	0	25	ug/L	09/27/16 16:10	
Naphthalene	13.96	50.00	65.14	102	67.42	107	45-109	3	25	ug/L	09/27/16 16:10	
Styrene	<1.000	50.00	43.23	86	44.45	89	61-124	3	25	ug/L	09/27/16 16:10	
1,1,2,2-Tetrachloroethane	<1.000	50.00	49.82	100	51.31	103		3	25	ug/L	09/27/16 16:10	
Tetrachloroethene	<1.000	50.00	51.61	103	50.21	100	68-139	3	25	ug/L	09/27/16 16:10	
Toluene	<1.000	50.00	53.26	107	50.96	102		4	25	ug/L	09/27/16 16:10	
1,2,3-Trichlorobenzene	<1.000	50.00	47.32	95	47.82	96	48-122	1	25	ug/L	09/27/16 16:10	
1,2,4-Trichlorobenzene	<1.000	50.00	52.13	104	53.53	107	54-124	3	25	ug/L	09/27/16 16:10	
1,1,1-Trichloroethane	<1.000	50.00	49.36	99	49.52	99	73-140	0	25	ug/L	09/27/16 16:10	
1,1,2-Trichloroethane	<1.000	50.00	51.95	104	50.26	101	78-124	3	25 25	ug/L ug/L	09/27/16 16:10	
Trichloroethene	<1.000	50.00	51.95	104	49.01	98	77-131	5 5	25 25	-	09/27/16 16:10	
Trichlorofluoromethane	<5.000	50.00	51.47	103	44.26	89	73-144	15	25 25	ug/L ug/L	09/27/16 16:10	
1,1,2-Trichloro-1,2,2-Trifluoroethane	<1.000	50.00	43.89	88	44.26	97	65-140	10	25 25	-	09/27/16 16:10	
Vinyl Chloride	<1.000	50.00	49.82	100	46.47 45.92	97 92	60-146	8	25 25	ug/L	09/27/16 16:10	
m,p-Xylenes	<2.000	100	49.82 88.49	88	45.92 86.56		75-125	2	25 25	ug/L	09/27/16 16:10	
п,р-лувенев	~2.000	100	00.49	00	00.00	01	10-120	2	20	ug/L	03121110 10.1U	•

PHASE SEPARATION SCIENCE, INC.

QC Summary 16092115

Icor Ltd. Robinson Terminal North

Analytical Method: SW-846 8260 B Prep Method: SW5030B Seq Number: 136140 Matrix: Ground Water Date Prep: 09/27/16

MS Sample Id: 16092115-005 S MSD Sample Id: 16092115-005 SD Parent Sample Id: 16092115-005

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
o-Xylene	<1.000	50.00	44.76	90	45.48	91	69-126	2	25	ug/L	09/27/16 16:1	0

Surrogate	MS Result	MS Flag	MSD Result	MSD Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	97		100		86-111	%	09/27/16 16:10
Dibromofluoromethane	96		98		91-119	%	09/27/16 16:10
Toluene-D8	104		102		90-117	%	09/27/16 16:10

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits

L = Recovery of BS,BSD or both below the laboratory control limits



SAMPLE CHAIN OF CUSTODY/AGREEMENT FORM

www.phaseonline.com

PHASE SEPARATION SCIENCE, INC.

email: info@phaseonline.com

*CLIENT:	100K, CTD,	*OFFIC	*OFFICE LOC.			PSS Work Order #:	rder #:	112600	5112	PAGE	OF	1
*PROJEC		KA *PHON	JE NO.: (72		5969	Matrix Codes: SW=Surface Wtr	¹tr DW=Drinkin	Wtr GW=Ground	DW=Drinking Wir GW=Ground Wir WW-Waste Wir O=0i	0=0il S=Soil L=Liquid SOL=Solid A=Air WI=Wipe	SOL=Sofid A	Air WI=Wipe
EMAIL: C	EMAIL: CANDCTER TE GOL, COFEX NO.	CO FAX NC):: (•		C SAMPLE		e			+	
*PROJEC	*PROJECT NAME: / LOLN SAN TELENMAL NO PROJECT NO	Elwan	-1605	JECT NO.:		N T	Method Required	//	///	Fra /		
SITE LOC.	SITE LOCATION: SOO/ SOI N. UNION ST.	DWW. F	P.O. NO.:	4O.:		A COMP	(MP)	//	/4/w/	(a)	/	1
SAMPLER	SAMPLER(S): M. BRUZECKI	2	DW CERT NO.:	 10.:		N G=	* * * * * * * * * * * * * * * * * * *	10/01	20/20/20/20/20/20/20/20/20/20/20/20/20/2	1/20/00	_	
LAB NO.	*SAMPLE IDENTIFICATION	CATION	*DATE *TIME (SAMPLED)	*TIME (SAMPLED)	MATRIX (See Codes)	E S	9	2/2/2	0/4/V	1/1/2/	/ RE	REMARKS
)	TEC-MW 2		H21/4 0830	0830	(Just	6 6	X	\forall \times \				
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7	M. Hot -os		>	1115	>	^ //	X	X X X	x x x	X		
							-					
Relinguished By:	A Market Day	Date 9/21/16	Time / 3/2	Received By	Y.A.	v	* * * * * * * * * * * * * * * * * * *	lested T	AT (One TAT per COC) 3-Day	# of Coolers: Custody Seal:	25	
Relinquished By: (2)	ned By: (2)	Date 9	Time 	Received By	S	.3	COA	Data Deliverables Required: SOA QC SUMM CLP LIKE	uired: LIKE OTHER	Shipping Carrier:	元 2007 万 万	300.6.01.6
Relinquished By: (3)	led By: (3)	Date	Time	Received By			Specie	Special Instructions:				
Relinquished By: (4)	led By: (4)	Date	Time	Received By:	sy:		DW COI	MPLIANCE?	EDD FORMAT TYPE	- 9□	STATE RESULTS REPORTED TO:	ОВТЕВ ТО: ОТНЕЯ
					00000							

The client (Client Name), by signing, or having client's agent sign, this "Sample Chain of Custody/Agreement Form", agrees to pay for the above requested services per the latest version of the Service Brochure or PSS-provided quotation including any and all attorney's or other reasonable fees if collection becomes necessary. * = REQUIRED 6630 Baltimore National Pike • Houte 40 West • Baltimore, Maryland 21228 • (410) 747-6770 • (600) 932-9047 • Fax (410) 765-6723

Version 1.000



Phase Separation Science, Inc

Sample Receipt Checklist

First St				
Work Order #	16092115	F	Received By	Rachel Davis
Client Name	Icor Ltd.		ate Received	09/21/2016 02:45:00 PM
Project Name	Robinson Terminal N	North E	elivered By	Trans Time Express
Disposal Date	10/26/2016	Т	racking No	Not Applicable
•			ogged In By	Rachel Davis
Shipping Conta	iner(s)	_	ogged III Dy	radio Bavio
No. of Coolers	1			
			Ice	Present
Custody Seal(s	•	N/A	Temp (deg	•
Seal(s) Signed Documentation	/ Dated?	N/A	теттр ыапк	Resent No
	ith commis labele?	Vaa	Sampler Na	ame <u>Mike Bruzzesi</u>
Coc agrees w	ith sample labels?	Yes Yes	MD DW Cei	rt. No. <u>N/A</u>
Sample Contain		163	0	al/a) lata atQ . Nat Asarka alala
•	Specified Analysis?	Yes	-	al(s) Intact? Not Applicable
Intact?	•	Yes	Seal(s) Sigr	ned / Dated Not Applicable
Labeled and La	abels Legible?	Yes		
Preservation Total Metals Dissolved Metals Orthophosphore Cyanides Sulfide TOC, DOC (fier TOX, TKN, NH- VOC, BTEX (Note) Do VOA vials in 624 VOC (Row 524 VOC (Ro	"OA Vials Rcvd Preser nave zero headspace? d at least one unpresed d with trip blanks) ny "No" response of r preservation conditions frany client notification as ed as soon as possible,	ninutes of collection nols ved) rved VOA vial) must be detailed i, list sample ID, pres s well as client instructoreferably in the field at a lected may not meet the	(ph (ph (ph (ph (ph (ph (ph tin the comm ervative added (etions. Samples of the time of sam the time of sam	H<2) Yes H<2) N/A N/A H>12) N/A H>9) N/A H<2) Yes N/A H<2) Yes N/A H<2) Yes ONA H<2) Yes ONA H<2) Samples which require thermal ove freezing to 6°C. Samples that are hall be considered acceptable if there is
Samples Inspected	/Checklist Completed By: -	Lackel Daws	s	Date: 09/21/2016
F	M Review and Approval: -	Simon Cris		Date: 09/23/2016

Analytical Report for

Icor Ltd.

Certificate of Analysis No.: 16092211

Project Manager: Mike Bruzzesi

Project Name: Robinson Terminal North Project Location: 500/501 N. Union St.



September 29, 2016
Phase Separation Science, Inc.
6630 Baltimore National Pike
Baltimore, MD 21228
Phone: (410) 747-8770

Fax: (410) 788-8723

PHASE SEPARATION SCIENCE, INC.



September 29, 2016

Mike Bruzzesi Icor Ltd. PO Box 406 Middleburg, VA 20118

Reference: PSS Work Order(s) No: 16092211

Project Name: Robinson Terminal North Project Location: 500/501 N. Union St.

Dear Mike Bruzzesi:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Work Order(s) numbered **16092211**.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on October 27, 2016, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

Dan PrucnalLaboratory Manager



Sample Summary

Client Name: Icor Ltd.

Project Name: Robinson Terminal North

Work Order Number(s): 16092211

The following samples were received under chain of custody by Phase Separation Science (PSS) on 09/22/2016 at 01:15 pm

Lab Sample Id	Sample Id	Matrix	Date/Time Collected
16092211-001	M1Hpt-20	GROUND WATER	09/21/16 13:40
16092211-002	M1Hpt-21	GROUND WATER	09/21/16 14:35
16092211-003	M1Hpt-22	GROUND WATER	09/21/16 14:45
16092211-004	M1Hpt-14	GROUND WATER	09/21/16 13:40

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

- 1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
- 2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
- 3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
- 4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminates, and part 141.3, for the secondary drinking water contaminates.
- 5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
- 6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
- 7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
- 8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

- B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- Results Pending Final Confirmation.
- E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- Fail The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
- J The target analyte was positively identified below the reporting limit but greater than the MDL.
- MDL This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is an estimate of the minimum amount of a substance that an analytical process can reliably detect. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific.
- ND Not Detected at or above the reporting limit.
- RL PSS Reporting Limit.
- U Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156 State Certifications: MD 179, WV 303 Regulated Soil Permit: P330-12-00268 NSWC USCG Accepted Laboratory LDBE MWAA LD1997-0041-2015

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16092211

Icor Ltd., Middleburg, VA

September 29, 2016

Sample ID: M1Hpt-20			e Sampled:			·	e ID: 1609221 <i>1</i>	1-001
Matrix: GROUND WATER	[Date/Time	Received:	09/22/	2016 13:1	5		
PP Metals	Analytica	l Method: S	SW-846 6020	Α		Preparation Meth	nod: 3010A	
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Antimony	ND	ug/L	5.0		1	09/23/16	09/23/16 22:19	1033
Arsenic	13	ug/L	1.0		1	09/23/16	09/23/16 22:19	1033
Beryllium	ND	ug/L	1.0		1	09/23/16	09/23/16 22:19	1033
Cadmium	7.4	ug/L	1.0		1	09/23/16	09/23/16 22:19	1033
Chromium	ND	ug/L	1.0		1	09/23/16	09/23/16 22:19	1033
Copper	12	ug/L	1.0		1	09/23/16	09/23/16 22:19	1033
Lead	2.0	ug/L	1.0		1	09/23/16	09/23/16 22:19	1033
Mercury	ND	ug/L	0.20		1	09/23/16	09/23/16 22:19	1033
Nickel	5.0	ug/L	1.0		1	09/23/16	09/23/16 22:19	1033
Selenium	8.3	ug/L	1.0		1	09/23/16	09/23/16 22:19	1033
Silver	ND	ug/L	1.0		1	09/23/16	09/23/16 22:19	1033
Thallium	ND	ug/L	1.0		1	09/23/16	09/23/16 22:19	1033
Zinc	8,600	ug/L	2,000		100	09/23/16	09/26/16 14:58	1033
Total Petroleum Hydrocarbons - DRO	Analytica	l Method: S	SW-846 8015	С		Preparation Meth	nod: 3510C	
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-DRO (Diesel Range Organics)	0.72	mg/L	0.10		1	09/23/16	09/26/16 00:32	1045
Total Petroleum Hydrocarbons-GRO	Analytica	l Method: \$	SW-846 8015	С		Preparation Meth	nod: 5030B	
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-GRO (Gasoline Range Organics)	180	ug/L	100		1	09/23/16	09/23/16 12:16	1035

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16092211

Icor Ltd., Middleburg, VA

September 29, 2016

Sample ID: M1Hpt-20		Date/Tir	ne Sampled:	09/21/2016 1	3:40 PSS Sample ID: 10	6092211	-001
Matrix: GROUND WATER		Date/Tim	ne Received:	09/22/2016 1	3:15		
Organochlorine Pesticides	Analytica	l Method:	: SW-846 8081	В	Preparation Method: 35	10C	
	Result	Units	RL	Flag Dil	Prepared Ana	lyzed	Analyst
alpha-BHC	ND	ug/L	0.040	1	09/23/16 09/26/	16 13:14	1029
gamma-BHC (Lindane)	ND	ug/L	0.040	1	09/23/16 09/26/	16 13:14	1029
beta-BHC	ND	ug/L	0.040	1	09/23/16 09/26/	16 13:14	1029
delta-BHC	ND	ug/L	0.040	1	09/23/16 09/26/	16 13:14	1029
Heptachlor	ND	ug/L	0.040	1	09/23/16 09/26/	16 13:14	1029
Aldrin	ND	ug/L	0.040	1	09/23/16 09/26/	16 13:14	1029
Heptachlor epoxide	ND	ug/L	0.040	1	09/23/16 09/26/	16 13:14	1029
gamma-Chlordane	ND	ug/L	0.040	1	09/23/16 09/26/	16 13:14	1029
alpha-Chlordane	ND	ug/L	0.040	1	09/23/16 09/26/	16 13:14	1029
4,4-DDE	ND	ug/L	0.040	1	09/23/16 09/26/	16 13:14	1029
Endosulfan I	ND	ug/L	0.040	1	09/23/16 09/26/	16 13:14	1029
Dieldrin	ND	ug/L	0.040	1	09/23/16 09/26/	16 13:14	1029
Endrin	ND	ug/L	0.040	1	09/23/16 09/26/	16 13:14	1029
4,4-DDD	ND	ug/L	0.040	1	09/23/16 09/26/	16 13:14	1029
Endosulfan II	ND	ug/L	0.040	1	09/23/16 09/26/	16 13:14	1029
4,4-DDT	ND	ug/L	0.040	1	09/23/16 09/26/	16 13:14	1029
Endrin aldehyde	ND	ug/L	0.040	1	09/23/16 09/26/	16 13:14	1029
Methoxychlor	ND	ug/L	0.040	1	09/23/16 09/26/	16 13:14	1029
Endosulfan sulfate	ND	ug/L	0.040	1	09/23/16 09/26/	16 13:14	1029
Endrin ketone	ND	ug/L	0.040	1	09/23/16 09/26/	16 13:14	1029
Toxaphene	ND	ug/L	1.0	1	09/23/16 09/26/	16 13:14	1029
Chlordane	ND	ug/L	1.0	1	09/23/16 09/26/	16 13:14	1029

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16092211

Icor Ltd., Middleburg, VA

September 29, 2016

Sample ID: M1Hpt-20		Date/Time	Sampled	09/21/2016	13·40 PSS Sampl	e ID: 16092211	1-001
Matrix: GROUND WATER				09/22/2016		5 ID. 10032211	1-001
Polychlorinated Biphenyls			W-846 8082		Preparation Meth		
	Result	Units	RL	Flag Dil	Prepared	Analyzed	Analyst
PCB-1016	ND	ug/L	0.50	1	09/23/16	09/26/16 10:18	1029
PCB-1221	ND	ug/L	0.50	1	09/23/16	09/26/16 10:18	1029
PCB-1232	ND	ug/L	0.50	1	09/23/16	09/26/16 10:18	1029
PCB-1242	ND	ug/L	0.50	1	09/23/16	09/26/16 10:18	1029
PCB-1248	ND	ug/L	0.50	1	09/23/16	09/26/16 10:18	1029
PCB-1254	ND	ug/L	0.50	1	09/23/16	09/26/16 10:18	1029
PCB-1260	ND	ug/L	0.50	1	09/23/16	09/26/16 10:18	1029
Chlorinated Herbicides	Analytica	l Method: S	W-846 8151	A	Preparation Met		
	Result	Units	RL	Flag Dil	Prepared	Analyzed	Analyst
Dalapon	ND	ug/L	4.8	10	09/26/16	09/27/16 15:33	1029
Dicamba	0.63	ug/L	0.20	10	09/26/16	09/27/16 15:33	1029
MCPP	ND	ug/L	200	10	09/26/16	09/27/16 15:33	1029
MCPA	ND	ug/L	200	10	09/26/16	09/27/16 15:33	1029
Dichloroprop	ND	ug/L	2.0	10	09/26/16	09/27/16 15:33	1029
2,4-D	ND	ug/L	2.0	10	09/26/16	09/27/16 15:33	1029
2,4,5-TP (Silvex)	ND	ug/L	0.20	10	09/26/16	09/27/16 15:33	1029
2,4,5-T	ND	ug/L	0.20	10	09/26/16	09/27/16 15:33	1029
Dinoseb	ND	ug/L	1.0	10	09/26/16	09/27/16 15:33	1029
2,4-DB	ND	ug/L	2.0	10	09/26/16	09/27/16 15:33	1029

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16092211

Icor Ltd., Middleburg, VA

September 29, 2016

Sample ID: M1Hpt-20 Matrix: GROUND WATER		Date/Time : Date/Time F	-			PSS Sample	I-001	
TCL Volatile Organic Compounds		l Method: SV				Preparation Meth	nod: 5030B	
_	Result	Units	RL	Flag [Dil	Prepared	Analyzed	Analyst
Acetone	ND	ug/L	10		1	09/27/16	09/27/16 18:41	1011
Benzene	14	ug/L	1.0		1	09/27/16	09/27/16 18:41	1011
Bromochloromethane	ND	ug/L	1.0		1	09/27/16	09/27/16 18:41	1011
Bromodichloromethane	ND	ug/L	1.0		1	09/27/16	09/27/16 18:41	1011
Bromoform	ND	ug/L	5.0		1	09/27/16	09/27/16 18:41	1011
Bromomethane	ND	ug/L	1.0		1	09/27/16	09/27/16 18:41	1011
2-Butanone (MEK)	ND	ug/L	10		1	09/27/16	09/27/16 18:41	1011
Carbon Disulfide	ND	ug/L	10		1	09/27/16	09/27/16 18:41	1011
Carbon Tetrachloride	ND	ug/L	1.0		1	09/27/16	09/27/16 18:41	1011
Chlorobenzene	ND	ug/L	1.0		1	09/27/16	09/27/16 18:41	1011
Chloroethane	ND	ug/L	1.0		1	09/27/16	09/27/16 18:41	1011
Chloroform	ND	ug/L	1.0		1	09/27/16	09/27/16 18:41	1011
Chloromethane	ND	ug/L	1.0		1	09/27/16	09/27/16 18:41	1011
Cyclohexane	ND	ug/L	10		1	09/27/16	09/27/16 18:41	1011
1,2-Dibromo-3-Chloropropane	ND	ug/L	10		1	09/27/16	09/27/16 18:41	1011
Dibromochloromethane	ND	ug/L	1.0		1	09/27/16	09/27/16 18:41	1011
1,2-Dibromoethane (EDB)	ND	ug/L	1.0		1	09/27/16	09/27/16 18:41	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	09/27/16	09/27/16 18:41	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	09/27/16	09/27/16 18:41	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	09/27/16	09/27/16 18:41	1011
Dichlorodifluoromethane	ND	ug/L	1.0		1	09/27/16	09/27/16 18:41	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	09/27/16	09/27/16 18:41	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	09/27/16	09/27/16 18:41	1011
cis-1,2-Dichloroethene	ND	ug/L	1.0		1	09/27/16	09/27/16 18:41	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	09/27/16	09/27/16 18:41	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	09/27/16	09/27/16 18:41	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	09/27/16	09/27/16 18:41	1011
trans-1,3-Dichloropropene	ND	ug/L	1.0		1	09/27/16	09/27/16 18:41	1011
trans-1,2-Dichloroethene	ND	ug/L	1.0		1	09/27/16	09/27/16 18:41	1011
Ethylbenzene	1.4	ug/L	1.0		1	09/27/16	09/27/16 18:41	1011

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16092211

Icor Ltd., Middleburg, VA

September 29, 2016

Sample ID: M1Hpt-20			-	09/21/2016 13:4	·	e ID: 1609221	1-001
Matrix: GROUND WATER				09/22/2016 13: ⁻	15		
TCL Volatile Organic Compounds	Analytica	l Method:	SW-846 8260	В	Preparation Met	nod: 5030B	
	Result	Units	RL	Flag Dil	Prepared	Analyzed	Analyst
2-Hexanone	ND	ug/L	10	1	09/27/16	09/27/16 18:41	l 1011
Isopropylbenzene	ND	ug/L	1.0	1	09/27/16	09/27/16 18:41	I 1011
Methyl Acetate	ND	ug/L	10	1	09/27/16	09/27/16 18:41	l 1011
Methylcyclohexane	ND	ug/L	10	1	09/27/16	09/27/16 18:41	1 1011
Methylene Chloride	ND	ug/L	1.0	1	09/27/16	09/27/16 18:41	1 1011
4-Methyl-2-Pentanone	ND	ug/L	5.0	1	09/27/16	09/27/16 18:41	I 1011
Methyl-t-butyl ether	ND	ug/L	1.0	1	09/27/16	09/27/16 18:41	I 1011
Naphthalene	67	ug/L	1.0	1	09/27/16	09/27/16 18:41	I 1011
Styrene	ND	ug/L	1.0	1	09/27/16	09/27/16 18:41	1 1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1	09/27/16	09/27/16 18:41	1011
Tetrachloroethene	ND	ug/L	1.0	1	09/27/16	09/27/16 18:41	I 1011
Toluene	2.6	ug/L	1.0	1	09/27/16	09/27/16 18:41	I 1011
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1	09/27/16	09/27/16 18:41	I 1011
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1	09/27/16	09/27/16 18:41	I 1011
1,1,1-Trichloroethane	ND	ug/L	1.0	1	09/27/16	09/27/16 18:41	I 1011
Trichloroethene	ND	ug/L	1.0	1	09/27/16	09/27/16 18:41	I 1011
1,1,2-Trichloroethane	ND	ug/L	1.0	1	09/27/16	09/27/16 18:41	I 1011
Trichlorofluoromethane	ND	ug/L	5.0	1	09/27/16	09/27/16 18:41	I 1011
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	ug/L	1.0	1	09/27/16	09/27/16 18:41	I 1011
Vinyl Chloride	ND	ug/L	1.0	1	09/27/16	09/27/16 18:41	l 1011
m,p-Xylenes	ND	ug/L	2.0	1	09/27/16	09/27/16 18:41	l 1011
o-Xylene	1.4	ug/L	1.0	1	09/27/16	09/27/16 18:41	I 1011

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16092211

Icor Ltd., Middleburg, VA

September 29, 2016

Sample ID: M1Hpt-20 Matrix: GROUND WATER	Date/Time Sampled: 09/21/2016 13:40 PSS Sample ID: 16092211-00 Date/Time Received: 09/22/2016 13:15							I - 001
TCL Semivolatile Organic Compounds		I Method: S\				Preparation Meth	nod: 3510C	
3	,a.,					, open anom		
	Result	Units	RL	Flag I	Dil	Prepared	Analyzed	Analyst
Acenaphthene	6.3	ug/L	5.0		1	09/26/16	09/26/16 19:38	1055
Acenaphthylene	ND	ug/L	5.0		1	09/26/16	09/26/16 19:38	1055
Acetophenone	ND	ug/L	5.0		1	09/26/16	09/26/16 19:38	1055
Anthracene	ND	ug/L	5.0		1	09/26/16	09/26/16 19:38	1055
Atrazine	ND	ug/L	5.0		1	09/26/16	09/26/16 19:38	1055
Benzo(a)anthracene	ND	ug/L	5.0		1	09/26/16	09/26/16 19:38	1055
Benzo(a)pyrene	ND	ug/L	5.0		1	09/26/16	09/26/16 19:38	1055
Benzo(b)fluoranthene	ND	ug/L	5.0		1	09/26/16	09/26/16 19:38	1055
Benzo(g,h,i)perylene	ND	ug/L	5.0		1	09/26/16	09/26/16 19:38	1055
Benzo(k)fluoranthene	ND	ug/L	5.0		1	09/26/16	09/26/16 19:38	1055
Biphenyl (Diphenyl)	ND	ug/L	5.0		1	09/26/16	09/26/16 19:38	1055
Butyl benzyl phthalate	ND	ug/L	5.0		1	09/26/16	09/26/16 19:38	1055
bis(2-chloroethoxy) methane	ND	ug/L	5.0		1	09/26/16	09/26/16 19:38	1055
bis(2-chloroethyl) ether	ND	ug/L	5.0		1	09/26/16	09/26/16 19:38	1055
bis(2-chloroisopropyl) ether	ND	ug/L	5.0		1	09/26/16	09/26/16 19:38	1055
bis(2-ethylhexyl) phthalate	ND	ug/L	5.0		1	09/26/16	09/26/16 19:38	1055
4-Bromophenylphenyl ether	ND	ug/L	5.0		1	09/26/16	09/26/16 19:38	1055
Di-n-butyl phthalate	ND	ug/L	5.0		1	09/26/16	09/26/16 19:38	1055
Carbazole	ND	ug/L	5.0		1	09/26/16	09/26/16 19:38	1055
Caprolactam	ND	ug/L	5.0		1	09/26/16	09/26/16 19:38	1055
4-Chloro-3-methyl phenol	ND	ug/L	5.0		1	09/26/16	09/26/16 19:38	1055
4-Chloroaniline	ND	ug/L	5.0		1	09/26/16	09/26/16 19:38	1055
2-Chloronaphthalene	ND	ug/L	5.0		1	09/26/16	09/26/16 19:38	1055
2-Chlorophenol	ND	ug/L	5.0		1	09/26/16	09/26/16 19:38	1055
4-Chlorophenyl Phenyl ether	ND	ug/L	5.0		1	09/26/16	09/26/16 19:38	1055
Chrysene	ND	ug/L	5.0		1	09/26/16	09/26/16 19:38	1055
Dibenz(a,h)Anthracene	ND	ug/L	5.0		1	09/26/16	09/26/16 19:38	1055
Dibenzofuran	11	ug/L	5.0		1	09/26/16	09/26/16 19:38	1055
3,3-Dichlorobenzidine	ND	ug/L	5.0		1	09/26/16	09/26/16 19:38	1055
2,4-Dichlorophenol	ND	ug/L	5.0		1	09/26/16	09/26/16 19:38	1055

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16092211

Icor Ltd., Middleburg, VA

September 29, 2016

Sample ID: M1Hpt-20 Matrix: GROUND WATER			-	09/21/2016 09/22/2016	PSS Sample	e ID: 16092211	I - 001
TCL Semivolatile Organic Compounds			W-846 8270		reparation Meth	nod: 3510C	
	Result	Units	RL	Flag Dil	Prepared	Analyzed	Analyst
Diethyl phthalate	ND	ug/L	5.0	1	09/26/16	09/26/16 19:38	1055
Dimethyl phthalate	ND	ug/L	5.0	1	09/26/16	09/26/16 19:38	1055
2,4-Dimethylphenol	ND	ug/L	5.0	1	09/26/16	09/26/16 19:38	1055
4,6-Dinitro-2-methyl phenol	ND	ug/L	5.0	1	09/26/16	09/26/16 19:38	1055
2,4-Dinitrophenol	ND	ug/L	10	1	09/26/16	09/26/16 19:38	1055
2,4-Dinitrotoluene	ND	ug/L	5.0	1	09/26/16	09/26/16 19:38	1055
2,6-Dinitrotoluene	ND	ug/L	5.0	1	09/26/16	09/26/16 19:38	1055
Fluoranthene	ND	ug/L	5.0	1	09/26/16	09/26/16 19:38	1055
Fluorene	12	ug/L	5.0	1	09/26/16	09/26/16 19:38	1055
Hexachlorobenzene	ND	ug/L	5.0	1	09/26/16	09/26/16 19:38	1055
Hexachlorobutadiene	ND	ug/L	5.0	1	09/26/16	09/26/16 19:38	1055
Hexachlorocyclopentadiene	ND	ug/L	5.0	1	09/26/16	09/26/16 19:38	1055
Hexachloroethane	ND	ug/L	5.0	1	09/26/16	09/26/16 19:38	1055
Indeno(1,2,3-c,d)Pyrene	ND	ug/L	5.0	1	09/26/16	09/26/16 19:38	1055
Isophorone	ND	ug/L	5.0	1	09/26/16	09/26/16 19:38	1055
2-Methylnaphthalene	ND	ug/L	5.0	1	09/26/16	09/26/16 19:38	1055
2-Methyl phenol	ND	ug/L	5.0	1	09/26/16	09/26/16 19:38	1055
3&4-Methylphenol	ND	ug/L	5.0	1	09/26/16	09/26/16 19:38	1055
Naphthalene	13	ug/L	5.0	1	09/26/16	09/26/16 19:38	1055
2-Nitroaniline	ND	ug/L	5.0	1	09/26/16	09/26/16 19:38	1055
3-Nitroaniline	ND	ug/L	5.0	1	09/26/16	09/26/16 19:38	1055
4-Nitroaniline	ND	ug/L	5.0	1	09/26/16	09/26/16 19:38	1055
Nitrobenzene	ND	ug/L	5.0	1	09/26/16	09/26/16 19:38	1055
2-Nitrophenol	ND	ug/L	5.0	1	09/26/16	09/26/16 19:38	1055
4-Nitrophenol	ND	ug/L	5.0	1	09/26/16	09/26/16 19:38	1055
N-Nitrosodi-n-propyl amine	ND	ug/L	5.0	1	09/26/16	09/26/16 19:38	1055
N-Nitrosodiphenylamine	ND	ug/L	5.0	1	09/26/16	09/26/16 19:38	1055
Di-n-octyl phthalate	ND	ug/L	5.0	1	09/26/16	09/26/16 19:38	1055
Pentachlorophenol	ND	ug/L	5.0	1	09/26/16	09/26/16 19:38	1055
Phenanthrene	10	ug/L	5.0	1	09/26/16	09/26/16 19:38	1055

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16092211

Icor Ltd., Middleburg, VA

September 29, 2016

Sample ID: M1Hpt-20 Matrix: GROUND WATER			-	09/21/2016 13: 09/22/2016 13:	<u>-</u>	e ID: 1609221	1-001
TCL Semivolatile Organic Compounds	Analytica	Method: S	SW-846 8270 C		Preparation Meth	nod: 3510C	
	Result	Units	RL	Flag Dil	Prepared	Analyzed	Analyst
Phenol	ND	ug/L	5.0	1	09/26/16	09/26/16 19:38	3 1055
Pyrene	ND	ug/L	5.0	1	09/26/16	09/26/16 19:38	3 1055
Pyridine	ND	ug/L	5.0	1	09/26/16	09/26/16 19:38	3 1055
2,4,5-Trichlorophenol	ND	ug/L	5.0	1	09/26/16	09/26/16 19:38	3 1055
2,4,6-Trichlorophenol	ND	ug/L	5.0	1	09/26/16	09/26/16 19:38	3 1055

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16092211

Icor Ltd., Middleburg, VA

September 29, 2016

Sample ID: M1Hpt-21 Matrix: GROUND WATER		Date/Time Sampled: 09/21/2016 14:3 Date/Time Received: 09/22/2016 13:1								
PP Metals	Analytica	l Method:	: SW-846 6020	Α	F	Preparation Meth	nod: 3010A			
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst		
Antimony	ND	ug/L	5.0		1	09/23/16	09/23/16 23:32	1033		
Arsenic	590	ug/L	10		10	09/23/16	09/26/16 15:04	1033		
Beryllium	ND	ug/L	1.0		1	09/23/16	09/23/16 23:32	1033		
Cadmium	ND	ug/L	1.0		1	09/23/16	09/23/16 23:32	1033		
Chromium	ND	ug/L	1.0		1	09/23/16	09/23/16 23:32	1033		
Copper	1.4	ug/L	1.0		1	09/23/16	09/23/16 23:32	1033		
Lead	ND	ug/L	1.0		1	09/23/16	09/23/16 23:32	1033		
Mercury	ND	ug/L	0.20		1	09/23/16	09/23/16 23:32	1033		
Nickel	2.1	ug/L	1.0		1	09/23/16	09/23/16 23:32	1033		
Selenium	3.3	ug/L	1.0		1	09/23/16	09/23/16 23:32	1033		
Silver	ND	ug/L	1.0		1	09/23/16	09/23/16 23:32	1033		
Thallium	ND	ug/L	1.0		1	09/23/16	09/23/16 23:32	1033		
Zinc	ND	ug/L	20		1	09/23/16	09/23/16 23:32	1033		
Total Petroleum Hydrocarbons - DRO	Analytica	l Method:	: SW-846 8015	С	F	Preparation Meth	nod: 3510C			
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst		
TPH-DRO (Diesel Range Organics)	1.7	mg/L	0.11		1	09/23/16	09/26/16 00:57	1045		
Total Petroleum Hydrocarbons-GRO	Analytica	l Method:	: SW-846 80150	С	F	Preparation Method: 5030B				
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst		
TPH-GRO (Gasoline Range Organics)	7,500	ug/L	100		1	09/23/16	09/23/16 13:33	1035		

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16092211

Icor Ltd., Middleburg, VA

September 29, 2016

Sample ID: M1Hpt-21	Date/Time Sampled: 09/21/201	6 14:35 PSS Sample ID: 16092211-002
Matrix: GROUND WATER	Date/Time Received: 09/22/201	6 13:15
Organochlorine Pesticides	Analytical Method: SW-846 8081 B	Preparation Method: 3510C

Organochiorine Pesticides	Analytical Method: SW-846 8081 B			В	Preparation Method: 3510C				
	Result	Units	RL	Flag Dil	Prepared	Analyzed	Analyst		
alpha-BHC	ND	ug/L	0.040	1	09/23/16	09/26/16 13:43	1029		
gamma-BHC (Lindane)	ND	ug/L	0.040	1	09/23/16	09/26/16 13:43	1029		
beta-BHC	ND	ug/L	0.040	1	09/23/16	09/26/16 13:43	1029		
delta-BHC	ND	ug/L	0.040	1	09/23/16	09/26/16 13:43	1029		
Heptachlor	ND	ug/L	0.040	1	09/23/16	09/26/16 13:43	1029		
Aldrin	ND	ug/L	0.040	1	09/23/16	09/26/16 13:43	1029		
Heptachlor epoxide	ND	ug/L	0.040	1	09/23/16	09/26/16 13:43	1029		
gamma-Chlordane	ND	ug/L	0.040	1	09/23/16	09/26/16 13:43	1029		
alpha-Chlordane	ND	ug/L	0.040	1	09/23/16	09/26/16 13:43	1029		
4,4-DDE	ND	ug/L	0.040	1	09/23/16	09/26/16 13:43	1029		
Endosulfan I	ND	ug/L	0.040	1	09/23/16	09/26/16 13:43	1029		
Dieldrin	ND	ug/L	0.040	1	09/23/16	09/26/16 13:43	1029		
Endrin	ND	ug/L	0.040	1	09/23/16	09/26/16 13:43	1029		
4,4-DDD	ND	ug/L	0.040	1	09/23/16	09/26/16 13:43	1029		
Endosulfan II	ND	ug/L	0.040	1	09/23/16	09/26/16 13:43	1029		
4,4-DDT	ND	ug/L	0.040	1	09/23/16	09/26/16 13:43	1029		
Endrin aldehyde	ND	ug/L	0.040	1	09/23/16	09/26/16 13:43	1029		
Methoxychlor	ND	ug/L	0.040	1	09/23/16	09/26/16 13:43	1029		
Endosulfan sulfate	ND	ug/L	0.040	1	09/23/16	09/26/16 13:43	1029		
Endrin ketone	ND	ug/L	0.040	1	09/23/16	09/26/16 13:43	1029		
Toxaphene	ND	ug/L	1.0	1	09/23/16	09/26/16 13:43	1029		
Chlordane	ND	ug/L	1.0	1	09/23/16	09/26/16 13:43	1029		

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16092211

Icor Ltd., Middleburg, VA

September 29, 2016

Sample ID: M1Hpt-21			e Sampled:			e ID: 16092211	1-002
Matrix: GROUND WATER		Date/Time	e Received:	09/22/2016 1	3:15		
Polychlorinated Biphenyls	Analytica	l Method:	SW-846 8082 .	A	Preparation Meth	nod: 3510C	
				5"	Clean up Method		
	Result	Units		Flag Dil	Prepared		Analyst
PCB-1016	ND	ug/L	0.50	1	09/23/16	09/26/16 10:47	1029
PCB-1221	ND	ug/L	0.50	1	09/23/16	09/26/16 10:47	1029
PCB-1232	ND	ug/L	0.50	1	09/23/16	09/26/16 10:47	1029
PCB-1242	ND	ug/L	0.50	1	09/23/16	09/26/16 10:47	1029
PCB-1248	ND	ug/L	0.50	1	09/23/16	09/26/16 10:47	1029
PCB-1254	ND	ug/L	0.50	1	09/23/16	09/26/16 10:47	1029
PCB-1260	ND	ug/L	0.50	1	09/23/16	09/26/16 10:47	1029
Chlorinated Herbicides	Δnalytica	l Mothod:	OW 046 0454	Preparation Meth	1 04544		
	Analytica	i ivieti ioa.	SW-846 8151 A	^	rieparation Meti	10d: 8151A	
	•				·		
	Result	Units		∽ Flag Dil	Prepared	Analyzed	Analyst
Dalapon	•				·		
Dalapon Dicamba	Result	Units	RL	Flag Dil	Prepared	Analyzed	1029
·	Result ND	Units ug/L	RL 460	Flag Dil	Prepared 09/26/16	Analyzed 09/29/16 12:05	1029 1029
Dicamba	Result ND 23	Units ug/L ug/L	RL 460 19	Flag Dil 1000 1000	Prepared 09/26/16 09/26/16	Analyzed 09/29/16 12:05 09/29/16 12:05	1029 1029 1029
Dicamba MCPP	Result ND 23 85,000	Units ug/L ug/L ug/L	RL 460 19 19,000	Flag Dil 1000 1000 1000	Prepared 09/26/16 09/26/16 09/26/16	Analyzed 09/29/16 12:05 09/29/16 12:05 09/29/16 12:05	1029 1029 1029 1029
Dicamba MCPP MCPA	Result ND 23 85,000 ND	Units ug/L ug/L ug/L ug/L	RL 460 19 19,000 19,000	Flag Dil 1000 1000 1000 1000	Prepared 09/26/16 09/26/16 09/26/16 09/26/16	Analyzed 09/29/16 12:05 09/29/16 12:05 09/29/16 12:05 09/29/16 12:05	1029 1029 1029 1029 1029
Dicamba MCPP MCPA Dichloroprop	Result ND 23 85,000 ND ND	ug/L ug/L ug/L ug/L ug/L	RL 460 19 19,000 19,000	Flag Dil 1000 1000 1000 1000 1000	Prepared 09/26/16 09/26/16 09/26/16 09/26/16 09/26/16	Analyzed 09/29/16 12:05 09/29/16 12:05 09/29/16 12:05 09/29/16 12:05 09/29/16 12:05	1029 1029 1029 1029 1029 1029
Dicamba MCPP MCPA Dichloroprop 2,4-D	Result ND 23 85,000 ND ND ND ND ND ND ND	Units ug/L ug/L ug/L ug/L ug/L ug/L ug/L	RL 460 19 19,000 19,000 190	Flag Dil 1000 1000 1000 1000 1000 1000 1000	Prepared 09/26/16 09/26/16 09/26/16 09/26/16 09/26/16 09/26/16	Analyzed 09/29/16 12:05 09/29/16 12:05 09/29/16 12:05 09/29/16 12:05 09/29/16 12:05	1029 1029 1029 1029 1029 1029 1029
Dicamba MCPP MCPA Dichloroprop 2,4-D 2,4,5-TP (Silvex)	Result ND 23 85,000 ND ND ND ND ND ND ND	ug/L ug/L ug/L ug/L ug/L ug/L ug/L	RL 460 19 19,000 19,000 190 190	Flag Dil 1000 1000 1000 1000 1000 1000 1000	Prepared 09/26/16 09/26/16 09/26/16 09/26/16 09/26/16 09/26/16 09/26/16	Analyzed 09/29/16 12:05 09/29/16 12:05 09/29/16 12:05 09/29/16 12:05 09/29/16 12:05 09/29/16 12:05	1029 1029 1029 1029 1029 1029 1029 1029

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16092211

Icor Ltd., Middleburg, VA

September 29, 2016

Sample ID: M1Hpt-21 Matrix: GROUND WATER			-	09/21/2016 09/22/2016	PSS Sampl	e ID: 16092211	1-002
TCL Volatile Organic Compounds		I Method: S\			Preparation Metl	nod: 5030B	
	Result	Units	RL	Flag Dil	Prepared	Analyzed	Analyst
Acetone	ND	ug/L	50	5	<u> </u>	09/27/16 19:02	
Benzene	58	ug/L	5.0	5	09/27/16	09/27/16 19:02	2 1011
Bromochloromethane	ND	ug/L	5.0	5	09/27/16	09/27/16 19:02	2 1011
Bromodichloromethane	ND	ug/L	5.0	5	09/27/16	09/27/16 19:02	2 1011
Bromoform	ND	ug/L	25	5	09/27/16	09/27/16 19:02	2 1011
Bromomethane	ND	ug/L	5.0	5	09/27/16	09/27/16 19:02	2 1011
2-Butanone (MEK)	ND	ug/L	50	5	09/27/16	09/27/16 19:02	2 1011
Carbon Disulfide	ND	ug/L	50	5	09/27/16	09/27/16 19:02	2 1011
Carbon Tetrachloride	ND	ug/L	5.0	5	09/27/16	09/27/16 19:02	2 1011
Chlorobenzene	ND	ug/L	5.0	5	09/27/16	09/27/16 19:02	2 1011
Chloroethane	ND	ug/L	5.0	5	09/27/16	09/27/16 19:02	2 1011
Chloroform	ND	ug/L	5.0	5	09/27/16	09/27/16 19:02	2 1011
Chloromethane	ND	ug/L	5.0	5	09/27/16	09/27/16 19:02	2 1011
Cyclohexane	560	ug/L	50	5	09/27/16	09/27/16 19:02	2 1011
1,2-Dibromo-3-Chloropropane	ND	ug/L	50	5	09/27/16	09/27/16 19:02	1011
Dibromochloromethane	ND	ug/L	5.0	5	09/27/16	09/27/16 19:02	2 1011
1,2-Dibromoethane (EDB)	ND	ug/L	5.0	5	09/27/16	09/27/16 19:02	2 1011
1,2-Dichlorobenzene	ND	ug/L	5.0	5	09/27/16	09/27/16 19:02	1011
1,3-Dichlorobenzene	ND	ug/L	5.0	5	09/27/16	09/27/16 19:02	2 1011
Dichlorodifluoromethane	ND	ug/L	5.0	5	09/27/16	09/27/16 19:02	1011
1,4-Dichlorobenzene	ND	ug/L	5.0	5	09/27/16	09/27/16 19:02	2 1011
1,1-Dichloroethane	ND	ug/L	5.0	5	09/27/16	09/27/16 19:02	2 1011
1,2-Dichloroethane	ND	ug/L	5.0	5	09/27/16	09/27/16 19:02	2 1011
1,1-Dichloroethene	ND	ug/L	5.0	5	09/27/16	09/27/16 19:02	2 1011
cis-1,2-Dichloroethene	ND	ug/L	5.0	5	09/27/16	09/27/16 19:02	2 1011
1,2-Dichloropropane	ND	ug/L	5.0	5	09/27/16	09/27/16 19:02	1011
cis-1,3-Dichloropropene	ND	ug/L	5.0	5	09/27/16	09/27/16 19:02	1011
trans-1,3-Dichloropropene	ND	ug/L	5.0	5	09/27/16	09/27/16 19:02	2 1011
trans-1,2-Dichloroethene	ND	ug/L	5.0	5	09/27/16	09/27/16 19:02	1011
Ethylbenzene	150	ug/L	5.0	5	09/27/16	09/27/16 19:02	1011

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16092211

Icor Ltd., Middleburg, VA

September 29, 2016

Project Name: Robinson Terminal North Project Location: 500/501 N. Union St.

o-Xylene

Sample ID: M1Hpt-21			ne Sampled:			•	e ID: 16092211	1-002
Matrix: GROUND WATER	[Date/Tim	e Received:	09/22/201	6 13:15	5		
TCL Volatile Organic Compounds	Analytica	I Method:	SW-846 8260	В		Preparation Meth	nod: 5030B	
_	Result	Units	RL	Flag D	il	Prepared	Analyzed	Analyst
2-Hexanone	ND	ug/L	50		5	09/27/16	09/27/16 19:02	1011
Isopropylbenzene	17	ug/L	5.0		5	09/27/16	09/27/16 19:02	1011
Methyl Acetate	ND	ug/L	50		5	09/27/16	09/27/16 19:02	1011
Methylcyclohexane	460	ug/L	50		5	09/27/16	09/27/16 19:02	1011
Methylene Chloride	ND	ug/L	5.0		5	09/27/16	09/27/16 19:02	1011
4-Methyl-2-Pentanone	ND	ug/L	25		5	09/27/16	09/27/16 19:02	1011
Methyl-t-butyl ether	ND	ug/L	5.0		5	09/27/16	09/27/16 19:02	1011
Naphthalene	6.4	ug/L	5.0		5	09/27/16	09/27/16 19:02	1011
Styrene	ND	ug/L	5.0		5	09/27/16	09/27/16 19:02	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	5.0		5	09/27/16	09/27/16 19:02	1011
Tetrachloroethene	47	ug/L	5.0		5	09/27/16	09/27/16 19:02	1011
Toluene	45	ug/L	5.0		5	09/27/16	09/27/16 19:02	1011
1,2,3-Trichlorobenzene	ND	ug/L	5.0		5	09/27/16	09/27/16 19:02	1011
1,2,4-Trichlorobenzene	ND	ug/L	5.0		5	09/27/16	09/27/16 19:02	1011
1,1,1-Trichloroethane	ND	ug/L	5.0		5	09/27/16	09/27/16 19:02	1011
1,1,2-Trichloroethane	ND	ug/L	5.0		5	09/27/16	09/27/16 19:02	1011
Trichloroethene	10	ug/L	5.0		5	09/27/16	09/27/16 19:02	1011
Trichlorofluoromethane	ND	ug/L	25		5	09/27/16	09/27/16 19:02	1011
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	ug/L	5.0		5	09/27/16	09/27/16 19:02	1011
Vinyl Chloride	ND	ug/L	5.0		5	09/27/16	09/27/16 19:02	1011
m,p-Xylenes	190	ug/L	10		5	09/27/16	09/27/16 19:02	1011

5.0

9.1

ug/L

5

09/27/16 09/27/16 19:02 1011

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16092211

Icor Ltd., Middleburg, VA

September 29, 2016

Sample ID: M1Hpt-21	Date/Time Sampled: 09/21/2016 14:35	PSS Sample ID: 16092211-002
Matrix: GROUND WATER	Date/Time Received: 09/22/2016 13:15	

TCL Semivolatile Organic Compounds	Analytica	l Method: SV	V-846 8270 C		Preparation Method: 3510C			
	Result	Units	RL FI	ag Dil	Prepared	Analyzed	Analyst	
Acenaphthene	ND	ug/L	5.0	1	09/26/16	09/26/16 20:04	1055	
Acenaphthylene	ND	ug/L	5.0	1	09/26/16	09/26/16 20:04	1055	
Acetophenone	ND	ug/L	5.0	1	09/26/16	09/26/16 20:04	1055	
Anthracene	ND	ug/L	5.0	1	09/26/16	09/26/16 20:04	1055	
Atrazine	ND	ug/L	5.0	1	09/26/16	09/26/16 20:04	1055	
Benzo(a)anthracene	ND	ug/L	5.0	1	09/26/16	09/26/16 20:04	1055	
Benzo(a)pyrene	ND	ug/L	5.0	1	09/26/16	09/26/16 20:04	1055	
Benzo(b)fluoranthene	ND	ug/L	5.0	1	09/26/16	09/26/16 20:04	1055	
Benzo(g,h,i)perylene	ND	ug/L	5.0	1	09/26/16	09/26/16 20:04	1055	
Benzo(k)fluoranthene	ND	ug/L	5.0	1	09/26/16	09/26/16 20:04	1055	
Biphenyl (Diphenyl)	ND	ug/L	5.0	1	09/26/16	09/26/16 20:04	1055	
Butyl benzyl phthalate	ND	ug/L	5.0	1	09/26/16	09/26/16 20:04	1055	
bis(2-chloroethoxy) methane	ND	ug/L	5.0	1	09/26/16	09/26/16 20:04	1055	
bis(2-chloroethyl) ether	ND	ug/L	5.0	1	09/26/16	09/26/16 20:04	1055	
bis(2-chloroisopropyl) ether	ND	ug/L	5.0	1	09/26/16	09/26/16 20:04	1055	
bis(2-ethylhexyl) phthalate	ND	ug/L	5.0	1	09/26/16	09/26/16 20:04	1055	
4-Bromophenylphenyl ether	ND	ug/L	5.0	1	09/26/16	09/26/16 20:04	1055	
Di-n-butyl phthalate	ND	ug/L	5.0	1	09/26/16	09/26/16 20:04	1055	
Carbazole	ND	ug/L	5.0	1	09/26/16	09/26/16 20:04	1055	
Caprolactam	ND	ug/L	5.0	1	09/26/16	09/26/16 20:04	1055	
4-Chloro-3-methyl phenol	ND	ug/L	5.0	1	09/26/16	09/26/16 20:04	1055	
4-Chloroaniline	ND	ug/L	5.0	1	09/26/16	09/26/16 20:04	1055	
2-Chloronaphthalene	ND	ug/L	5.0	1	09/26/16	09/26/16 20:04	1055	
2-Chlorophenol	8.3	ug/L	5.0	1	09/26/16	09/26/16 20:04	1055	
4-Chlorophenyl Phenyl ether	ND	ug/L	5.0	1	09/26/16	09/26/16 20:04	1055	
Chrysene	ND	ug/L	5.0	1	09/26/16	09/26/16 20:04	1055	
Dibenz(a,h)Anthracene	ND	ug/L	5.0	1	09/26/16	09/26/16 20:04	1055	
Dibenzofuran	ND	ug/L	5.0	1	09/26/16	09/26/16 20:04	1055	
3,3-Dichlorobenzidine	ND	ug/L	5.0	1	09/26/16	09/26/16 20:04	1055	
2,4-Dichlorophenol	710	ug/L	50	10	09/26/16	09/27/16 11:57	7 1055	

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16092211

Icor Ltd., Middleburg, VA

September 29, 2016

Sample ID: M1Hpt-21 Matrix: GROUND WATER			e Sampled: e Received:				e ID: 1609221′	1-002
TCL Semivolatile Organic Compounds			SW-846 8270			Preparation Met	nod: 3510C	
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Diethyl phthalate	ND	ug/L	5.0		1	09/26/16	09/26/16 20:04	1055
Dimethyl phthalate	ND	ug/L	5.0		1	09/26/16	09/26/16 20:04	1055
2,4-Dimethylphenol	ND	ug/L	5.0		1	09/26/16	09/26/16 20:04	1055
4,6-Dinitro-2-methyl phenol	ND	ug/L	5.0		1	09/26/16	09/26/16 20:04	1055
2,4-Dinitrophenol	ND	ug/L	10		1	09/26/16	09/26/16 20:04	1055
2,4-Dinitrotoluene	ND	ug/L	5.0		1	09/26/16	09/26/16 20:04	1055
2,6-Dinitrotoluene	ND	ug/L	5.0		1	09/26/16	09/26/16 20:04	1055
Fluoranthene	ND	ug/L	5.0		1	09/26/16	09/26/16 20:04	1055
Fluorene	ND	ug/L	5.0		1	09/26/16	09/26/16 20:04	1055
Hexachlorobenzene	ND	ug/L	5.0		1	09/26/16	09/26/16 20:04	1055
Hexachlorobutadiene	ND	ug/L	5.0		1	09/26/16	09/26/16 20:04	1055
Hexachlorocyclopentadiene	ND	ug/L	5.0		1	09/26/16	09/26/16 20:04	1055
Hexachloroethane	ND	ug/L	5.0		1	09/26/16	09/26/16 20:04	1055
Indeno(1,2,3-c,d)Pyrene	ND	ug/L	5.0		1	09/26/16	09/26/16 20:04	1055
Isophorone	ND	ug/L	5.0		1	09/26/16	09/26/16 20:04	1055
2-Methylnaphthalene	ND	ug/L	5.0		1	09/26/16	09/26/16 20:04	1055
2-Methyl phenol	ND	ug/L	5.0		1	09/26/16	09/26/16 20:04	1055
3&4-Methylphenol	ND	ug/L	5.0		1	09/26/16	09/26/16 20:04	1055
Naphthalene	35	ug/L	5.0		1	09/26/16	09/26/16 20:04	1055
2-Nitroaniline	ND	ug/L	5.0		1	09/26/16	09/26/16 20:04	1055
3-Nitroaniline	ND	ug/L	5.0		1	09/26/16	09/26/16 20:04	1055
4-Nitroaniline	ND	ug/L	5.0		1	09/26/16	09/26/16 20:04	1055
Nitrobenzene	ND	ug/L	5.0		1	09/26/16	09/26/16 20:04	1055
2-Nitrophenol	ND	ug/L	5.0		1	09/26/16	09/26/16 20:04	1055
4-Nitrophenol	ND	ug/L	5.0		1	09/26/16	09/26/16 20:04	1055
N-Nitrosodi-n-propyl amine	ND	ug/L	5.0		1	09/26/16	09/26/16 20:04	1055
N-Nitrosodiphenylamine	ND	ug/L	5.0		1	09/26/16	09/26/16 20:04	1055
Di-n-octyl phthalate	ND	ug/L	5.0		1	09/26/16	09/26/16 20:04	1055
Pentachlorophenol	13	ug/L	5.0		1	09/26/16	09/26/16 20:04	1055
Phenanthrene	ND	ug/L	5.0		1	09/26/16	09/26/16 20:04	1055

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16092211

Icor Ltd., Middleburg, VA

September 29, 2016

Sample ID: M1Hpt-21 Matrix: GROUND WATER			e Sampled: Received:				e ID: 1609221 ⁻	1-002
TCL Semivolatile Organic Compounds	Analytica	Method: S	SW-846 8270	С		Preparation Meth	nod: 3510C	
	Result	Units	RL	Flag Di		Prepared	Analyzed	Analyst
Phenol	ND	ug/L	5.0		1	09/26/16	09/26/16 20:04	1055
Pyrene	ND	ug/L	5.0		1	09/26/16	09/26/16 20:04	1055
Pyridine	ND	ug/L	5.0		1	09/26/16	09/26/16 20:04	1055
2,4,5-Trichlorophenol	53	ug/L	5.0		1	09/26/16	09/26/16 20:04	1055
2,4,6-Trichlorophenol	ND	ug/L	5.0		1	09/26/16	09/26/16 20:04	1055

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16092211

Icor Ltd., Middleburg, VA

September 29, 2016

Sample ID: M1Hpt-22		Date/Time \$	-			•	e ID: 16092211	1-003
Matrix: GROUND WATER	[Date/Time F	Received:	09/22/	2016 13:15			
PP Metals	Analytica	l Method: SW	Method: SW-846 6020 A			Preparation Method: 3010A		
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Antimony	ND	ug/L	5.0		1	09/23/16	09/23/16 23:38	1033
Arsenic	180	ug/L	5.0		5	09/23/16	09/26/16 15:10	1033
Beryllium	ND	ug/L	1.0		1	09/23/16	09/23/16 23:38	1033
Cadmium	ND	ug/L	1.0		1	09/23/16	09/23/16 23:38	1033
Chromium	1.9	ug/L	1.0		1	09/23/16	09/23/16 23:38	1033
Copper	2.4	ug/L	1.0		1	09/23/16	09/23/16 23:38	1033
Lead	1.6	ug/L	1.0		1	09/23/16	09/23/16 23:38	1033
Mercury	ND	ug/L	0.20		1	09/23/16	09/23/16 23:38	1033
Nickel	2.0	ug/L	1.0		1	09/23/16	09/23/16 23:38	1033
Selenium	ND	ug/L	1.0		1	09/23/16	09/23/16 23:38	1033
Silver	ND	ug/L	1.0		1	09/23/16	09/23/16 23:38	1033
Thallium	ND	ug/L	1.0		1	09/23/16	09/23/16 23:38	1033
Zinc	22	ug/L	20		1	09/23/16	09/23/16 23:38	1033
Total Petroleum Hydrocarbons - DRO	Analytica	l Method: SW	V-846 8015	С	ı	Preparation Meth	nod: 3510C	
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-DRO (Diesel Range Organics)	0.27	mg/L	0.12		1	09/23/16	09/26/16 00:57	1045
Total Petroleum Hydrocarbons-GRO	Analytica	l Method: SW	V-846 8015	С	1	Preparation Meth	nod: 5030B	
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-GRO (Gasoline Range Organics)	380	ug/L	100		1	09/23/16	09/23/16 12:42	1035

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16092211

Icor Ltd., Middleburg, VA

September 29, 2016

Sample ID: M1Hpt-22	Date/Time Sampled: 09/21/2016 14:45	PSS Sample ID: 16092211-003
Matrix: GROUND WATER	Date/Time Received: 09/22/2016 13:15	

Organochlorine Pesticides	Analytica	I Method: S	W-846 8081 B		Preparation Method: 3510C			
	Result	Units	RL F	ag Dil	Prepared	Analyzed	Analyst	
alpha-BHC	ND	ug/L	0.040	1	09/23/16 0	9/26/16 14:11	1029	
gamma-BHC (Lindane)	ND	ug/L	0.040	1	09/23/16 0	9/26/16 14:11	1029	
beta-BHC	ND	ug/L	0.040	1	09/23/16 0	9/26/16 14:11	1029	
delta-BHC	ND	ug/L	0.040	1	09/23/16 0	9/26/16 14:11	1029	
Heptachlor	ND	ug/L	0.040	1	09/23/16 0	9/26/16 14:11	1029	
Aldrin	ND	ug/L	0.040	1	09/23/16 0	9/26/16 14:11	1029	
Heptachlor epoxide	ND	ug/L	0.040	1	09/23/16 0	9/26/16 14:11	1029	
gamma-Chlordane	ND	ug/L	0.040	1	09/23/16 0	9/26/16 14:11	1029	
alpha-Chlordane	ND	ug/L	0.040	1	09/23/16 0	9/26/16 14:11	1029	
4,4-DDE	ND	ug/L	0.040	1	09/23/16 0	9/26/16 14:11	1029	
Endosulfan I	ND	ug/L	0.040	1	09/23/16 0	9/26/16 14:11	1029	
Dieldrin	ND	ug/L	0.040	1	09/23/16 0	9/26/16 14:11	1029	
Endrin	ND	ug/L	0.040	1	09/23/16 0	9/26/16 14:11	1029	
4,4-DDD	ND	ug/L	0.040	1	09/23/16 0	9/26/16 14:11	1029	
Endosulfan II	ND	ug/L	0.040	1	09/23/16 0	9/26/16 14:11	1029	
4,4-DDT	ND	ug/L	0.040	1	09/23/16 0	9/26/16 14:11	1029	
Endrin aldehyde	ND	ug/L	0.040	1	09/23/16 0	9/26/16 14:11	1029	
Methoxychlor	ND	ug/L	0.040	1	09/23/16 0	9/26/16 14:11	1029	
Endosulfan sulfate	ND	ug/L	0.040	1	09/23/16 0	9/26/16 14:11	1029	
Endrin ketone	ND	ug/L	0.040	1	09/23/16 0	9/26/16 14:11	1029	
Toxaphene	ND	ug/L	1.0	1	09/23/16 0	9/26/16 14:11	1029	
Chlordane	ND	ug/L	1.0	1	09/23/16 0	9/26/16 14:11	1029	

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16092211

Icor Ltd., Middleburg, VA

September 29, 2016

Sample ID: M1Hpt-22		Date/Time	Sampled:	09/21/2016 1	A·A5 PSS Samnl	e ID: 1609221 ⁻	1_003		
Matrix: GROUND WATER			-	09/22/2016 1		e ID. 1003221	1-005		
Polychlorinated Biphenyls			sW-846 8082	Preparation Metl	Preparation Method: 3510C Clean up Method: SW846 3665A				
	Result	Units	RL	Flag Dil	Prepared	Analyzed	Analyst		
PCB-1016	ND	ug/L	0.50	1	09/23/16	09/26/16 11:16	1029		
PCB-1221	ND	ug/L	0.50	1	09/23/16	09/26/16 11:16	1029		
PCB-1232	ND	ug/L	0.50	1	09/23/16	09/26/16 11:16	1029		
PCB-1242	ND	ug/L	0.50	1	09/23/16	09/26/16 11:16	1029		
PCB-1248	ND	ug/L	0.50	1	09/23/16	09/26/16 11:16	1029		
PCB-1254	ND	ug/L	0.50	1	09/23/16	09/26/16 11:16	1029		
PCB-1260	ND	ug/L	0.50	1	09/23/16	09/26/16 11:16	1029		
Chlorinated Herbicides	Analytica	ll Method: S	SW-846 8151	A	Preparation Metl	Preparation Method: 8151A			
	Result	Units	RL	Flag Dil	Prepared	Analyzed	Analyst		
Dalapon	ND	ug/L	46	100	09/26/16	09/29/16 12:38	3 1029		
Dicamba	ND	ug/L	1.9	100	09/26/16	09/29/16 12:38	3 1029		
MCPP	ND	ug/L	1,900	100	09/26/16	09/29/16 12:38	3 1029		
MCPA	ND	ug/L	1,900	100	09/26/16	09/29/16 12:38	3 1029		
Dichloroprop	ND	ug/L	19	100	09/26/16	09/29/16 12:38	3 1029		
2,4-D	ND	ug/L	19	100	09/26/16	09/29/16 12:38	3 1029		
2,4,5-TP (Silvex)	ND	ug/L	1.9	100	09/26/16	09/29/16 12:38	3 1029		
2,4,5-T	ND	ug/L	1.9	100	09/26/16	09/29/16 12:38	3 1029		
Dinoseb	ND	ug/L	9.5	100	09/26/16	09/29/16 12:38	3 1029		
2,4-DB	ND	ug/L	19	100	09/26/16	09/29/16 12:38	3 1029		

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16092211

Icor Ltd., Middleburg, VA

September 29, 2016

Sample ID: M1Hpt-22			Sampled:			PSS Sampl	e ID: 16092211	I - 003	
Matrix: GROUND WATER	[Date/Time	Received:	09/22/201	16 13:15				
TCL Volatile Organic Compounds	Analytica	l Method: S	W-846 8260	В	F	Preparation Method: 5030B			
	Result	Units	RL	Flag D	il	Prepared	Analyzed	Analyst	
Acetone	ND	ug/L	10		1	09/27/16	09/27/16 19:24	1011	
Benzene	130	ug/L	1.0		1	09/27/16	09/27/16 19:24	1011	
Bromochloromethane	ND	ug/L	1.0		1	09/27/16	09/27/16 19:24	1011	
Bromodichloromethane	ND	ug/L	1.0		1	09/27/16	09/27/16 19:24	1011	
Bromoform	ND	ug/L	5.0		1	09/27/16	09/27/16 19:24	1011	
Bromomethane	ND	ug/L	1.0		1	09/27/16	09/27/16 19:24	1011	
2-Butanone (MEK)	ND	ug/L	10		1	09/27/16	09/27/16 19:24	1011	
Carbon Disulfide	ND	ug/L	10		1	09/27/16	09/27/16 19:24	1011	
Carbon Tetrachloride	ND	ug/L	1.0		1	09/27/16	09/27/16 19:24	1011	
Chlorobenzene	ND	ug/L	1.0		1	09/27/16	09/27/16 19:24	1011	
Chloroethane	ND	ug/L	1.0		1	09/27/16	09/27/16 19:24	1011	
Chloroform	ND	ug/L	1.0		1	09/27/16	09/27/16 19:24	1011	
Chloromethane	ND	ug/L	1.0		1	09/27/16	09/27/16 19:24	1011	
Cyclohexane	10	ug/L	10		1	09/27/16	09/27/16 19:24	1011	
1,2-Dibromo-3-Chloropropane	ND	ug/L	10		1	09/27/16	09/27/16 19:24	1011	
Dibromochloromethane	ND	ug/L	1.0		1	09/27/16	09/27/16 19:24	1011	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0		1	09/27/16	09/27/16 19:24	1011	
1,2-Dichlorobenzene	ND	ug/L	1.0		1	09/27/16	09/27/16 19:24	1011	
1,3-Dichlorobenzene	ND	ug/L	1.0		1	09/27/16	09/27/16 19:24	1011	
Dichlorodifluoromethane	ND	ug/L	1.0		1	09/27/16	09/27/16 19:24	1011	
1,4-Dichlorobenzene	ND	ug/L	1.0		1	09/27/16	09/27/16 19:24	1011	
1,1-Dichloroethane	ND	ug/L	1.0		1	09/27/16	09/27/16 19:24	1011	
1,2-Dichloroethane	ND	ug/L	1.0		1	09/27/16	09/27/16 19:24	1011	
1,1-Dichloroethene	ND	ug/L	1.0		1	09/27/16	09/27/16 19:24	1011	
cis-1,2-Dichloroethene	ND	ug/L	1.0		1	09/27/16	09/27/16 19:24	1011	
1,2-Dichloropropane	ND	ug/L	1.0		1	09/27/16	09/27/16 19:24	1011	
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	09/27/16	09/27/16 19:24	1011	
trans-1,3-Dichloropropene	ND	ug/L	1.0		1	09/27/16	09/27/16 19:24	1011	
trans-1,2-Dichloroethene	ND	ug/L	1.0		1	09/27/16	09/27/16 19:24	1011	
Ethylbenzene	1.6	ug/L	1.0		1	09/27/16	09/27/16 19:24	1011	

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16092211

Icor Ltd., Middleburg, VA

September 29, 2016

Sample ID: M1Hpt-22	Date/Time Sampled: 09/21/2016 14:45	PSS Sample ID: 16092211-003
Matrix: GROUND WATER	Date/Time Received: 09/22/2016 13:15	

TCL Volatile Organic Compounds	Analytical Method: SW-846 8260 B				Preparation Method: 5030B			
	Result	Units	RL Flag	Dil	Prepared Analyzed Analyst			
2-Hexanone	ND	ug/L	10	1	09/27/16 09/27/16 19:24 1011			
Isopropylbenzene	ND	ug/L	1.0	1	09/27/16 09/27/16 19:24 1011			
Methyl Acetate	ND	ug/L	10	1	09/27/16 09/27/16 19:24 1011			
Methylcyclohexane	ND	ug/L	10	1	09/27/16 09/27/16 19:24 1011			
Methylene Chloride	ND	ug/L	1.0	1	09/27/16 09/27/16 19:24 1011			
4-Methyl-2-Pentanone	ND	ug/L	5.0	1	09/27/16 09/27/16 19:24 1011			
Methyl-t-butyl ether	ND	ug/L	1.0	1	09/27/16 09/27/16 19:24 1011			
Naphthalene	ND	ug/L	1.0	1	09/27/16 09/27/16 19:24 1011			
Styrene	ND	ug/L	1.0	1	09/27/16 09/27/16 19:24 1011			
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1	09/27/16 09/27/16 19:24 1011			
Tetrachloroethene	ND	ug/L	1.0	1	09/27/16 09/27/16 19:24 1011			
Toluene	ND	ug/L	1.0	1	09/27/16 09/27/16 19:24 1011			
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1	09/27/16 09/27/16 19:24 1011			
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1	09/27/16 09/27/16 19:24 1011			
1,1,1-Trichloroethane	ND	ug/L	1.0	1	09/27/16 09/27/16 19:24 1011			
1,1,2-Trichloroethane	ND	ug/L	1.0	1	09/27/16 09/27/16 19:24 1011			
Trichloroethene	ND	ug/L	1.0	1	09/27/16 09/27/16 19:24 1011			
Trichlorofluoromethane	ND	ug/L	5.0	1	09/27/16 09/27/16 19:24 1011			
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	ug/L	1.0	1	09/27/16 09/27/16 19:24 1011			
Vinyl Chloride	ND	ug/L	1.0	1	09/27/16 09/27/16 19:24 1011			
m,p-Xylenes	ND	ug/L	2.0	1	09/27/16 09/27/16 19:24 1011			
o-Xylene	ND	ug/L	1.0	1	09/27/16 09/27/16 19:24 1011			

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

Date/Time Sampled: 09/21/2016 14:45 PSS Sample ID: 16092211-003

No: 16092211

Icor Ltd., Middleburg, VA

September 29, 2016

Project Name: Robinson Terminal North Project Location: 500/501 N. Union St.

Sample ID: M1Hpt-22

3,3-Dichlorobenzidine

2,4-Dichlorophenol

Matrix: GROUND WATER		Date/Time	Received:	09/22/201	6 13:15				
TCL Semivolatile Organic Compounds			SW-846 8270			Preparation Method: 3510C			
	Result	Units	RL	Flag Di	l Prepared	Analyzed	Analyst		
Acenaphthene	ND	ug/L	5.0		1 09/26/16	09/26/16 20:31	1055		
Acenaphthylene	ND	ug/L	5.0		1 09/26/16	09/26/16 20:31	l 1055		
Acetophenone	ND	ug/L	5.0		1 09/26/16	09/26/16 20:31	l 1055		
Anthracene	ND	ug/L	5.0		1 09/26/16	09/26/16 20:31	l 1055		
Atrazine	ND	ug/L	5.0		1 09/26/16	09/26/16 20:31	l 1055		
Benzo(a)anthracene	ND	ug/L	5.0		1 09/26/16	09/26/16 20:31	l 1055		
Benzo(a)pyrene	ND	ug/L	5.0		1 09/26/16	09/26/16 20:31	l 1055		
Benzo(b)fluoranthene	ND	ug/L	5.0		1 09/26/16	09/26/16 20:31	l 1055		
Benzo(g,h,i)perylene	ND	ug/L	5.0		1 09/26/16	09/26/16 20:31	l 1055		
Benzo(k)fluoranthene	ND	ug/L	5.0		1 09/26/16	09/26/16 20:31	1055		
Biphenyl (Diphenyl)	ND	ug/L	5.0		1 09/26/16	09/26/16 20:31	1055		
Butyl benzyl phthalate	ND	ug/L	5.0		1 09/26/16	09/26/16 20:31	l 1055		
bis(2-chloroethoxy) methane	ND	ug/L	5.0		1 09/26/16	09/26/16 20:31	1055		
bis(2-chloroethyl) ether	ND	ug/L	5.0		1 09/26/16	09/26/16 20:31	1055		
bis(2-chloroisopropyl) ether	ND	ug/L	5.0		1 09/26/16	09/26/16 20:31	1055		
bis(2-ethylhexyl) phthalate	ND	ug/L	5.0		1 09/26/16	09/26/16 20:31	1055		
4-Bromophenylphenyl ether	ND	ug/L	5.0		1 09/26/16	09/26/16 20:31	1055		
Di-n-butyl phthalate	ND	ug/L	5.0		1 09/26/16	09/26/16 20:31	l 1055		
Carbazole	ND	ug/L	5.0		1 09/26/16	09/26/16 20:31	1055		
Caprolactam	ND	ug/L	5.0		1 09/26/16	09/26/16 20:31	1055		
4-Chloro-3-methyl phenol	ND	ug/L	5.0		1 09/26/16	09/26/16 20:31	1055		
4-Chloroaniline	ND	ug/L	5.0		1 09/26/16	09/26/16 20:31	l 1055		
2-Chloronaphthalene	ND	ug/L	5.0		1 09/26/16	09/26/16 20:31	l 1055		
2-Chlorophenol	ND	ug/L	5.0		1 09/26/16	09/26/16 20:31	1055		
4-Chlorophenyl Phenyl ether	ND	ug/L	5.0		1 09/26/16	09/26/16 20:31	1055		
Chrysene	ND	ug/L	5.0		1 09/26/16	09/26/16 20:31	1055		
Dibenz(a,h)Anthracene	ND	ug/L	5.0		1 09/26/16	09/26/16 20:31	1055		
Dibenzofuran	ND	ug/L	5.0		1 09/26/16	09/26/16 20:31	l 1055		

5.0

5.0

1

ND

ND

ug/L

ug/L

09/26/16 09/26/16 20:31 1055

09/26/16 09/26/16 20:31 1055

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16092211

Icor Ltd., Middleburg, VA

September 29, 2016

Sample ID: M1Hpt-22	Date/Time Sampled: 09/21/2016 14:45	PSS Sample ID: 16092211-003
Matrix: GROUND WATER	Date/Time Received: 09/22/2016 13:15	

TCL Semivolatile Organic Compounds	Analytica	l Method: SV	thod: SW-846 8270 C			Preparation Meth	nod: 3510C	
	Result	Units	RL	Flag D	il	Prepared	Analyzed	Analyst
Diethyl phthalate	ND	ug/L	5.0		1	09/26/16	09/26/16 20:31	1055
Dimethyl phthalate	ND	ug/L	5.0		1	09/26/16	09/26/16 20:31	1055
2,4-Dimethylphenol	ND	ug/L	5.0		1	09/26/16	09/26/16 20:31	1055
4,6-Dinitro-2-methyl phenol	ND	ug/L	5.0		1	09/26/16	09/26/16 20:31	1055
2,4-Dinitrophenol	ND	ug/L	10		1	09/26/16	09/26/16 20:31	1055
2,4-Dinitrotoluene	ND	ug/L	5.0		1	09/26/16	09/26/16 20:31	1055
2,6-Dinitrotoluene	ND	ug/L	5.0		1	09/26/16	09/26/16 20:31	1055
Fluoranthene	ND	ug/L	5.0		1	09/26/16	09/26/16 20:31	1055
Fluorene	ND	ug/L	5.0		1	09/26/16	09/26/16 20:31	1055
Hexachlorobenzene	ND	ug/L	5.0		1	09/26/16	09/26/16 20:31	1055
Hexachlorobutadiene	ND	ug/L	5.0		1	09/26/16	09/26/16 20:31	1055
Hexachlorocyclopentadiene	ND	ug/L	5.0		1	09/26/16	09/26/16 20:31	1055
Hexachloroethane	ND	ug/L	5.0		1	09/26/16	09/26/16 20:31	1055
Indeno(1,2,3-c,d)Pyrene	ND	ug/L	5.0		1	09/26/16	09/26/16 20:31	1055
Isophorone	ND	ug/L	5.0		1	09/26/16	09/26/16 20:31	1055
2-Methylnaphthalene	ND	ug/L	5.0		1	09/26/16	09/26/16 20:31	1055
2-Methyl phenol	ND	ug/L	5.0		1	09/26/16	09/26/16 20:31	1055
3&4-Methylphenol	ND	ug/L	5.0		1	09/26/16	09/26/16 20:31	1055
Naphthalene	ND	ug/L	5.0		1	09/26/16	09/26/16 20:31	1055
2-Nitroaniline	ND	ug/L	5.0		1	09/26/16	09/26/16 20:31	1055
3-Nitroaniline	ND	ug/L	5.0		1	09/26/16	09/26/16 20:31	1055
4-Nitroaniline	ND	ug/L	5.0		1	09/26/16	09/26/16 20:31	1055
Nitrobenzene	ND	ug/L	5.0		1	09/26/16	09/26/16 20:31	1055
2-Nitrophenol	ND	ug/L	5.0		1	09/26/16	09/26/16 20:31	1055
4-Nitrophenol	ND	ug/L	5.0		1	09/26/16	09/26/16 20:31	1055
N-Nitrosodi-n-propyl amine	ND	ug/L	5.0		1	09/26/16	09/26/16 20:31	1055
N-Nitrosodiphenylamine	ND	ug/L	5.0		1	09/26/16	09/26/16 20:31	1055
Di-n-octyl phthalate	ND	ug/L	5.0		1	09/26/16	09/26/16 20:31	1055
Pentachlorophenol	ND	ug/L	5.0		1	09/26/16	09/26/16 20:31	1055
Phenanthrene	ND	ug/L	5.0		1	09/26/16	09/26/16 20:31	1055

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16092211

Icor Ltd., Middleburg, VA

September 29, 2016

Sample ID: M1Hpt-22 Matrix: GROUND WATER			e Sampled: e Received:			-	e ID: 1609221 ⁻	1-003		
TCL Semivolatile Organic Compounds	Analytica	Analytical Method: SW-846 8270 C				Preparation Meth	Preparation Method: 3510C			
	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst		
Phenol	ND	ug/L	5.0		1	09/26/16	09/26/16 20:31	1055		
Pyrene	ND	ug/L	5.0		1	09/26/16	09/26/16 20:31	1055		
Pyridine	ND	ug/L	5.0		1	09/26/16	09/26/16 20:31	1055		
2,4,5-Trichlorophenol	ND	ug/L	5.0		1	09/26/16	09/26/16 20:31	1055		
2,4,6-Trichlorophenol	ND	ug/L	5.0		1	09/26/16	09/26/16 20:31	1055		

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16092211

Icor Ltd., Middleburg, VA

September 29, 2016

Sample ID: M1Hpt-14 Matrix: GROUND WATER			ne Sampled: ne Received:			-	e ID: 1609221	1-004	
PP Metals	Analytica	l Method:	: SW-846 6020	Α		Preparation Meth	Preparation Method: 3010A		
_	Result	Units	RL	Flag [Dil	Prepared	Analyzed	Analyst	
Antimony	ND	ug/L	5.0		1	09/23/16	09/23/16 23:45	1033	
Arsenic	12	ug/L	1.0		1	09/23/16	09/23/16 23:45	5 1033	
Beryllium	ND	ug/L	1.0		1	09/23/16	09/23/16 23:45	1033	
Cadmium	24	ug/L	1.0		1	09/23/16	09/23/16 23:45	5 1033	
Chromium	ND	ug/L	1.0		1	09/23/16	09/23/16 23:45	5 1033	
Copper	1,200	ug/L	100	•	100	09/23/16	09/26/16 15:16	1033	
Lead	ND	ug/L	1.0		1	09/23/16	09/23/16 23:45	1033	
Mercury	ND	ug/L	0.20		1	09/23/16	09/23/16 23:45	1033	
Nickel	16	ug/L	1.0		1	09/23/16	09/23/16 23:45	1033	
Selenium	ND	ug/L	1.0		1	09/23/16	09/23/16 23:45	5 1033	
Silver	ND	ug/L	1.0		1	09/23/16	09/23/16 23:45	1033	
Thallium	ND	ug/L	1.0		1	09/23/16	09/23/16 23:45	1033	
Zinc	16,000	ug/L	2,000	•	100	09/23/16	09/26/16 15:16	1033	
Total Petroleum Hydrocarbons - DRO	Analytica	l Method:	: SW-846 8015	С		Preparation Meth	nod: 3510C		
	Result	Units	RL	Flag [Dil	Prepared	Analyzed	Analyst	
TPH-DRO (Diesel Range Organics)	0.75	mg/L	0.11		1	09/23/16	09/26/16 01:22	2 1045	
Total Petroleum Hydrocarbons-GRO	Analytica	l Method:	: SW-846 80150	С		Preparation Meth	nod: 5030B		
	Result	Units	RL	Flag [Dil	Prepared	Analyzed	Analyst	
TPH-GRO (Gasoline Range Organics)	330	ug/L	100		1	09/23/16	09/23/16 13:07	1035	

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16092211

Icor Ltd., Middleburg, VA

September 29, 2016

Sample ID: M1Hpt-14	Date/Time Sampled: 09/21/2016 13:40	PSS Sample ID: 16092211-004
Matrix: GROUND WATER	Date/Time Received: 09/22/2016 13:15	

Organochlorine Pesticides	Analytical Method: SW-846 8081 B			Preparation Method: 3510C			
	Result	Units	RL	Flag Dil	Prepared	Analyzed	Analyst
alpha-BHC	ND	ug/L	0.040	1	09/23/16	09/26/16 18:25	5 1029
gamma-BHC (Lindane)	ND	ug/L	0.040	1	09/23/16	09/26/16 18:25	5 1029
beta-BHC	ND	ug/L	0.040	1	09/23/16	09/26/16 18:25	5 1029
delta-BHC	ND	ug/L	0.040	1	09/23/16	09/26/16 18:25	5 1029
Heptachlor	ND	ug/L	0.040	1	09/23/16	09/26/16 18:25	5 1029
Aldrin	ND	ug/L	0.040	1	09/23/16	09/26/16 18:25	5 1029
Heptachlor epoxide	ND	ug/L	0.040	1	09/23/16	09/26/16 18:25	5 1029
gamma-Chlordane	ND	ug/L	0.040	1	09/23/16	09/26/16 18:25	5 1029
alpha-Chlordane	ND	ug/L	0.040	1	09/23/16	09/26/16 18:25	5 1029
4,4-DDE	ND	ug/L	0.040	1	09/23/16	09/26/16 18:25	5 1029
Endosulfan I	ND	ug/L	0.040	1	09/23/16	09/26/16 18:25	5 1029
Dieldrin	ND	ug/L	0.040	1	09/23/16	09/26/16 18:25	5 1029
Endrin	ND	ug/L	0.040	1	09/23/16	09/26/16 18:25	5 1029
4,4-DDD	ND	ug/L	0.040	1	09/23/16	09/26/16 18:25	5 1029
Endosulfan II	ND	ug/L	0.040	1	09/23/16	09/26/16 18:25	5 1029
4,4-DDT	ND	ug/L	0.040	1	09/23/16	09/26/16 18:25	5 1029
Endrin aldehyde	ND	ug/L	0.040	1	09/23/16	09/26/16 18:25	5 1029
Methoxychlor	ND	ug/L	0.040	1	09/23/16	09/26/16 18:25	5 1029
Endosulfan sulfate	ND	ug/L	0.040	1	09/23/16	09/26/16 18:25	5 1029
Endrin ketone	ND	ug/L	0.040	1	09/23/16	09/26/16 18:25	5 1029
Toxaphene	ND	ug/L	1.0	1	09/23/16	09/26/16 18:25	5 1029
Chlordane	ND	ug/L	1.0	1	09/23/16	09/26/16 18:25	5 1029

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16092211

Icor Ltd., Middleburg, VA

September 29, 2016

Commission Mallert 44		Data/Tim	o Comente de	00/04/0046	12:40 BCC Commi	- ID: 4000224	1 004		
Sample ID: M1Hpt-14 Matrix: GROUND WATER			ne Sampled: e Received:		•	e ID: 1609221 ²	1-004		
Polychlorinated Biphenyls			SW-846 8082	Preparation Meth	Preparation Method: 3510C Clean up Method: SW846 3665A				
	Result	Units	RL	Flag Dil	Prepared	Analyzed	Analyst		
PCB-1016	ND	ug/L	0.50	1	09/23/16	09/26/16 12:15	1029		
PCB-1221	ND	ug/L	0.50	1	09/23/16	09/26/16 12:15	1029		
PCB-1232	ND	ug/L	0.50	1	09/23/16	09/26/16 12:15	1029		
PCB-1242	ND	ug/L	0.50	1	09/23/16	09/26/16 12:15	1029		
PCB-1248	ND	ug/L	0.50	1	09/23/16	09/26/16 12:15	1029		
PCB-1254	ND	ug/L	0.50	1	09/23/16	09/26/16 12:15	1029		
PCB-1260	ND	ug/L	0.50	1	09/23/16	09/26/16 12:15	1029		
Chlorinated Herbicides	Analytica	Analytical Method: SW-846 8151 A			Preparation Met	Preparation Method: 8151A			
	Result	Units	RL	Flag Dil	Prepared	Analyzed	Analyst		
Dalapon	ND	ug/L	46	100	09/26/16	09/29/16 13:11	1029		
Dicamba	ND	ug/L	1.9	100	09/26/16	09/29/16 13:11	1029		
MCPP	ND	ug/L	1,900	100	09/26/16	09/29/16 13:11	1029		
MCPA	ND	ug/L	1,900	100	09/26/16	09/29/16 13:11	1029		
Dichloroprop	ND	ug/L	19	100	09/26/16	09/29/16 13:11	1029		
2,4-D	ND	ug/L	19	100	09/26/16	09/29/16 13:11	1029		
2,4,5-TP (Silvex)	4.4	ug/L	1.9	100	09/26/16	09/29/16 13:11	1029		
2,4,5-T	ND	ug/L	1.9	100	09/26/16	09/29/16 13:11	1029		
Dinoseb	ND	ug/L	9.5	100	09/26/16	09/29/16 13:11	1029		
2,4-DB	ND	ug/L	19	100	09/26/16	09/29/16 13:11	1029		

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

Date/Time Sampled: 09/21/2016 13:40 PSS Sample ID: 16092211-004

No: 16092211

Icor Ltd., Middleburg, VA

September 29, 2016

Project Name: Robinson Terminal North Project Location: 500/501 N. Union St.

Sample ID: M1Hpt-14

			-				
Matrix: GROUND WATER		Date/Time	Received: 09	/22/2016 13:	15		
TCL Volatile Organic Compounds	Analytical Method: SW-846 8260 B				Preparation Method: 5030B		
	Result	Units	RL FI	ag Dil	Prepared	Analyzed	Analyst
Acetone	ND	ug/L	10	1	09/27/16	09/27/16 19:46	1011
Benzene	66	ug/L	1.0	1	09/27/16	09/27/16 19:46	1011
Promochloromothono	ND	ua/l	1.0	1	00/27/16	00/27/16 10:46	1011

	itesuit	Office	INL I lag		i repareu	Allalyzeu /	milalyst
Acetone	ND	ug/L	10	1	09/27/16	09/27/16 19:46	1011
Benzene	66	ug/L	1.0	1	09/27/16	09/27/16 19:46	1011
Bromochloromethane	ND	ug/L	1.0	1	09/27/16	09/27/16 19:46	1011
Bromodichloromethane	ND	ug/L	1.0	1	09/27/16	09/27/16 19:46	1011
Bromoform	ND	ug/L	5.0	1	09/27/16	09/27/16 19:46	1011
Bromomethane	ND	ug/L	1.0	1	09/27/16	09/27/16 19:46	1011
2-Butanone (MEK)	ND	ug/L	10	1	09/27/16	09/27/16 19:46	1011
Carbon Disulfide	ND	ug/L	10	1	09/27/16	09/27/16 19:46	1011
Carbon Tetrachloride	ND	ug/L	1.0	1	09/27/16	09/27/16 19:46	1011
Chlorobenzene	ND	ug/L	1.0	1	09/27/16	09/27/16 19:46	1011
Chloroethane	ND	ug/L	1.0	1	09/27/16	09/27/16 19:46	1011
Chloroform	1.4	ug/L	1.0	1	09/27/16	09/27/16 19:46	1011
Chloromethane	ND	ug/L	1.0	1	09/27/16	09/27/16 19:46	1011
Cyclohexane	ND	ug/L	10	1	09/27/16	09/27/16 19:46	1011
1,2-Dibromo-3-Chloropropane	ND	ug/L	10	1	09/27/16	09/27/16 19:46	1011
Dibromochloromethane	ND	ug/L	1.0	1	09/27/16	09/27/16 19:46	1011
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1	09/27/16	09/27/16 19:46	1011
1,2-Dichlorobenzene	ND	ug/L	1.0	1	09/27/16	09/27/16 19:46	1011
1,3-Dichlorobenzene	ND	ug/L	1.0	1	09/27/16	09/27/16 19:46	1011
Dichlorodifluoromethane	ND	ug/L	1.0	1	09/27/16	09/27/16 19:46	1011
1,4-Dichlorobenzene	ND	ug/L	1.0	1	09/27/16	09/27/16 19:46	1011
1,1-Dichloroethane	ND	ug/L	1.0	1	09/27/16	09/27/16 19:46	1011
1,2-Dichloroethane	ND	ug/L	1.0	1	09/27/16	09/27/16 19:46	1011
cis-1,2-Dichloroethene	ND	ug/L	1.0	1	09/27/16	09/27/16 19:46	1011
1,1-Dichloroethene	ND	ug/L	1.0	1	09/27/16	09/27/16 19:46	1011
1,2-Dichloropropane	ND	ug/L	1.0	1	09/27/16	09/27/16 19:46	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0	1	09/27/16	09/27/16 19:46	1011
trans-1,3-Dichloropropene	ND	ug/L	1.0	1	09/27/16	09/27/16 19:46	1011
trans-1,2-Dichloroethene	ND	ug/L	1.0	1	09/27/16	09/27/16 19:46	1011
Ethylbenzene	5.4	ug/L	1.0	1	09/27/16	09/27/16 19:46	1011

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16092211

Icor Ltd., Middleburg, VA

September 29, 2016

Sample ID: M1Hpt-14	Date/Time Sampled: 09/21/2016 13:40	PSS Sample ID: 16092211-004
Matrix: GROUND WATER	Date/Time Received: 09/22/2016 13:15	

TCL Volatile Organic Compounds	Analytica	Method: \$	SW-846 8260 B		Preparation Meth	nod: 5030B	
_	Result	Units	RL F	lag Dil	Prepared	Analyzed	Analyst
2-Hexanone	ND	ug/L	10	1	09/27/16	09/27/16 19:46	1011
Isopropylbenzene	ND	ug/L	1.0	1	09/27/16	09/27/16 19:46	1011
Methyl Acetate	ND	ug/L	10	1	09/27/16	09/27/16 19:46	1011
Methylcyclohexane	ND	ug/L	10	1	09/27/16	09/27/16 19:46	1011
Methylene Chloride	ND	ug/L	1.0	1	09/27/16	09/27/16 19:46	1011
4-Methyl-2-Pentanone	ND	ug/L	5.0	1	09/27/16	09/27/16 19:46	1011
Methyl-t-butyl ether	ND	ug/L	1.0	1	09/27/16	09/27/16 19:46	1011
Naphthalene	37	ug/L	1.0	1	09/27/16	09/27/16 19:46	1011
Styrene	ND	ug/L	1.0	1	09/27/16	09/27/16 19:46	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1	09/27/16	09/27/16 19:46	1011
Tetrachloroethene	ND	ug/L	1.0	1	09/27/16	09/27/16 19:46	1011
Toluene	5.6	ug/L	1.0	1	09/27/16	09/27/16 19:46	5 1011
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1	09/27/16	09/27/16 19:46	5 1011
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1	09/27/16	09/27/16 19:46	1011
1,1,1-Trichloroethane	ND	ug/L	1.0	1	09/27/16	09/27/16 19:46	1011
Trichloroethene	ND	ug/L	1.0	1	09/27/16	09/27/16 19:46	1011
1,1,2-Trichloroethane	ND	ug/L	1.0	1	09/27/16	09/27/16 19:46	5 1011
Trichlorofluoromethane	ND	ug/L	5.0	1	09/27/16	09/27/16 19:46	1011
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	ug/L	1.0	1	09/27/16	09/27/16 19:46	1011
Vinyl Chloride	ND	ug/L	1.0	1	09/27/16	09/27/16 19:46	1011
m,p-Xylenes	2.8	ug/L	2.0	1	09/27/16	09/27/16 19:46	1011
o-Xylene	4.8	ug/L	1.0	1	09/27/16	09/27/16 19:46	1011

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16092211

Icor Ltd., Middleburg, VA

September 29, 2016

Sample ID: M1Hpt-14 Matrix: GROUND WATER		Date/Time Date/Time l	-			•		
TCL Semivolatile Organic Compounds		I Method: S\				Preparation Metl	nod: 3510C	
	Result	Units	RL	Flag	Dil	Prepared	Analyzad	Analyst
		ug/L	5.0	гіау	1		Analyzed 09/26/16 20:58	Analyst 1055
Acenaphthene Acenaphthylene	12 ND	ug/L ug/L	5.0		1		09/26/16 20:58	
Acetophenone	ND	ug/L ug/L	5.0		1		09/26/16 20:58	
Anthracene		ug/L ug/L	5.0		1		09/26/16 20:58	
Atrazine	6.3 ND	ug/L ug/L	5.0		1		09/26/16 20:58	
Benzo(a)anthracene	ND	ug/L ug/L	5.0		1		09/26/16 20:58	
	ND	ug/L ug/L	5.0		1		09/26/16 20:58	
Benzo(a)pyrene Benzo(b)fluoranthene	ND	ug/L ug/L	5.0		1		09/26/16 20:58	
Benzo(g,h,i)perylene	ND	ug/L ug/L	5.0		1		09/26/16 20:58	
Benzo(k)fluoranthene	ND	ug/L ug/L	5.0		1		09/26/16 20:58	
Biphenyl (Diphenyl)	ND	ug/L	5.0		1		09/26/16 20:58	
Butyl benzyl phthalate	ND	ug/L	5.0		1		09/26/16 20:58	
bis(2-chloroethoxy) methane	ND	ug/L	5.0		1		09/26/16 20:58	
bis(2-chloroethyl) ether	ND	ug/L	5.0		1		09/26/16 20:58	
bis(2-chloroisopropyl) ether	ND	ug/L	5.0		1		09/26/16 20:58	
bis(2-ethylhexyl) phthalate	ND	ug/L	5.0		1		09/26/16 20:58	
4-Bromophenylphenyl ether	ND	ug/L	5.0		1		09/26/16 20:58	
Di-n-butyl phthalate	ND	ug/L	5.0		1		09/26/16 20:58	
Carbazole	7.4	ug/L	5.0		1		09/26/16 20:58	
Caprolactam	ND	ug/L	5.0		1		09/26/16 20:58	
4-Chloro-3-methyl phenol	ND	ug/L	5.0		1		09/26/16 20:58	
4-Chloroaniline	ND	ug/L	5.0		1	09/26/16	09/26/16 20:58	1055
2-Chloronaphthalene	ND	ug/L	5.0		1		09/26/16 20:58	
2-Chlorophenol	ND	ug/L	5.0		1	09/26/16	09/26/16 20:58	1055
4-Chlorophenyl Phenyl ether	ND	ug/L	5.0		1	09/26/16	09/26/16 20:58	1055
Chrysene	ND	ug/L	5.0		1	09/26/16	09/26/16 20:58	1055
Dibenz(a,h)Anthracene	ND	ug/L	5.0		1	09/26/16	09/26/16 20:58	1055
Dibenzofuran	13	ug/L	5.0		1	09/26/16	09/26/16 20:58	1055
3,3-Dichlorobenzidine	ND	ug/L	5.0		1	09/26/16	09/26/16 20:58	1055
2,4-Dichlorophenol	13	ug/L	5.0		1	09/26/16	09/26/16 20:58	1055

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16092211

Icor Ltd., Middleburg, VA

September 29, 2016

Sample ID: M1Hpt-14 Matrix: GROUND WATER			Sampled: Received:			PSS Sample ID: 16092211-004		
TCL Semivolatile Organic Compounds			W-846 8270			Preparation Meth	nod: 3510C	
	Danult	11:4	D.	Flag D	:1	Duamanad	A a l a d	A l 4
Diethyl abtholete	Result	Units	RL 5.0	Flag D	1	Prepared 09/26/16	Analyzed	Analyst 1055
Diethyl phthalate	ND	ug/L	5.0				09/26/16 20:58 09/26/16 20:58	
Dimethyl phthalate	ND ND	ug/L			1			
2,4-Dimethylphenol		ug/L	5.0				09/26/16 20:58 09/26/16 20:58	
4,6-Dinitro-2-methyl phenol	ND ND	ug/L	5.0 10		1		09/26/16 20:58	
2,4-Dinitrophenol		ug/L			-			
2,4-Dinitrotoluene	ND	ug/L	5.0		1		09/26/16 20:58	
2,6-Dinitrotoluene	ND	ug/L	5.0		1		09/26/16 20:58	
Fluoranthene	ND	ug/L	5.0		1		09/26/16 20:58	
Fluorene	18	ug/L	5.0		1		09/26/16 20:58	
Hexachlorobenzene	ND	ug/L	5.0		1		09/26/16 20:58	
Hexachlorobutadiene	ND	ug/L	5.0		1	09/26/16		
Hexachlorocyclopentadiene	ND	ug/L "	5.0		1		09/26/16 20:58	
Hexachloroethane	ND	ug/L	5.0		1		09/26/16 20:58	
Indeno(1,2,3-c,d)Pyrene	ND	ug/L	5.0		1		09/26/16 20:58	
Isophorone	ND	ug/L	5.0		1		09/26/16 20:58	
2-Methylnaphthalene	ND	ug/L	5.0		1		09/26/16 20:58	
2-Methyl phenol	ND	ug/L	5.0		1		09/26/16 20:58	
3&4-Methylphenol	ND	ug/L	5.0		1	09/26/16	09/26/16 20:58	1055
Naphthalene	10	ug/L	5.0		1		09/26/16 20:58	
2-Nitroaniline	ND	ug/L	5.0		1		09/26/16 20:58	
3-Nitroaniline	ND	ug/L	5.0		1	09/26/16	09/26/16 20:58	1055
4-Nitroaniline	ND	ug/L	5.0		1	09/26/16	09/26/16 20:58	1055
Nitrobenzene	ND	ug/L	5.0		1	09/26/16	09/26/16 20:58	1055
2-Nitrophenol	ND	ug/L	5.0		1	09/26/16	09/26/16 20:58	1055
4-Nitrophenol	ND	ug/L	5.0		1	09/26/16	09/26/16 20:58	1055
N-Nitrosodi-n-propyl amine	ND	ug/L	5.0		1	09/26/16	09/26/16 20:58	1055
N-Nitrosodiphenylamine	ND	ug/L	5.0		1	09/26/16	09/26/16 20:58	1055
Di-n-octyl phthalate	ND	ug/L	5.0		1	09/26/16	09/26/16 20:58	1055
Pentachlorophenol	ND	ug/L	5.0		1	09/26/16	09/26/16 20:58	1055
Phenanthrene	21	ug/L	5.0		1	09/26/16	09/26/16 20:58	1055

PHASE SEPARATION SCIENCE, INC.



CERTIFICATE OF ANALYSIS

No: 16092211

Icor Ltd., Middleburg, VA

September 29, 2016

Sample ID: M1Hpt-14 Matrix: GROUND WATER			e Sampled: Received:		•	e ID: 1609221	1-004
TCL Semivolatile Organic Compounds	Analytica	Method: S	SW-846 8270	С	Preparation Meth	nod: 3510C	
	Result	Units	RL	Flag Dil	Prepared	Analyzed	Analyst
Phenol	ND	ug/L	5.0	1	09/26/16	09/26/16 20:58	3 1055
Pyrene	ND	ug/L	5.0	1	09/26/16	09/26/16 20:58	3 1055
Pyridine	ND	ug/L	5.0	1	09/26/16	09/26/16 20:58	3 1055
2,4,5-Trichlorophenol	ND	ug/L	5.0	1	09/26/16	09/26/16 20:58	3 1055
2,4,6-Trichlorophenol	ND	ug/L	5.0	1	09/26/16	09/26/16 20:58	3 1055

Case Narrative Summary

Client Name: Icor Ltd.

Project Name: Robinson Terminal North

Work Order Number(s): 16092211

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

The analyses of chlorine, pH, dissolved oxygen, temperature and sulfite for drinking water and non-potable samples tested for compliance have a maximum holding time of 15 minutes. As such, all laboratory analyses for these analytes exceed holding times.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

All sample receipt conditions were acceptable.

Analytical:

PP Metals

Batch: 136073

Matrix spike and/or matrix spike duplicate (MS/MSD) exceedances identified; see MS summary form. The concentration of the following analyte(s) in the reference sample was greater than four times the matrix spike concentration: zinc

Batch: 136095

Closing CCV had a copper recovery of 111% and a zinc recovery of 114%, which are above the control limits of 90-110%.

Organochlorine Pesticides

Batch: 136106

4,4-DDT and Methoxychlor in closing CCV was 74% and 77% due to sample matrix. All samples were confirmed on second column.

Laboratory control sample and/or laboratory control sample duplicate (LCS/LCSD) exceedances identified; see LCS summary form.

Chlorinated Herbicides

Batch: 136151

Surrogate recoveries affected by sample dilution.

The recoveries of MCPP and MCPA in the closing CCV-R4 were 75% and 79% (80-120%). All samples were confirmed on second column.

TCL Semivolatile Organic Compounds

Batch: 136130

Laboratory control sample and/or laboratory control sample duplicate (LCS/LCSD) exceedances identified; see LCS summary form.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

Page 36 of 56 Version 1.000



Case Narrative Summary

Client Name: Icor Ltd.

Project Name: Robinson Terminal North

Work Order Number(s): 16092211



Analytical Data Package Information Summary

Work Order(s): 16092211

Report Prepared For: Icor Ltd., Middleburg, VA Project Name: Robinson Terminal North Project Manager: Mike Bruzzesi

Initial Initial Initial Initial Initial Initial Initial SD Reanalysis	16092211-001						
MIHpt-20 Initial MIHpt-21 Initial MIHpt-22 Initial MIHpt-14 Initial 62687-1-BKS BKS 62687-1-BKS BKS 62687-1-BKS MS MIHpt-20 S Reanalysis MIHpt-20 SD Reanalysis MIHpt-21 Reanalysis MIHpt-21 Reanalysis MIHpt-22 Reanalysis MIHpt-21 Initial MIHpt-21 Initial MIHpt-21 BKS 62675-1-BKS BKS 62675-1-BKS 62675-1-BKS MIHpt-20 Initial MIHpt-14 Initial MIHpt-14 Initial MIHpt-14 Initial MIHpt-14 Initial MIHpt-14 Initial MIHpt-15 Initial MIHpt-16 Initial MIHpt-17 Initial MIHpt-18 BKS 62675-1-BKS 62675-1-BKS MIHpt-20 Initial	16092211-001						
MIHpt-21 Initial MIHpt-14 Initial MIHpt-14 Initial 62687-1-BKS BKS 62687-1-BLK BLK MIHpt-20 S MS MIHpt-20 SD Reanalysis MIHpt-21 Reanalysis MIHpt-21 Reanalysis MIHpt-21 Reanalysis MIHpt-21 Reanalysis MIHpt-21 Reanalysis MIHpt-21 Initial MIHpt-21 Initial MIHpt-21 BRS 62675-1-BKS 62675-1-BKS 62675-1-BSD MIHpt-20 Initial MIHpt-14 Initial MIHpt-10 Initial	16092211-002	1033 W	62687	136073	09/21/2016	09/23/2016 10:46	09/23/2016 22:19
M1Hpt-22 Initial 62687-1-BKS BKS 62687-1-BLK BLK M1Hpt-20 S MS M1Hpt-20 SD MSD M1Hpt-20 SD Reanalysis M1Hpt-20 SD Reanalysis M1Hpt-21 Reanalysis M1Hpt-21 Reanalysis M1Hpt-21 Reanalysis M1Hpt-21 Reanalysis M1Hpt-21 Initial M1Hpt-21 Initial M1Hpt-21 Initial M1Hpt-21 BSD G2675-1-BKS 62675-1-BKS M1Hpt-20 Initial M1Hpt-14 Initial M1Hpt-14 Initial M1Hpt-14 Initial M1Hpt-14 Initial M1Hpt-14 Initial M1Hpt-14 Initial M1Hpt-15 Initial M1Hpt-16 Initial M1Hpt-17 Initial	100 1111 0001	1033 W	62687	136073	09/21/2016	09/23/2016 10:46	09/23/2016 23:32
M1Hpt-14 Initial 62687-1-BKS BKS 62687-1-BLK BLK M1Hpt-20 S MSD M1Hpt-20 SD Reanalysis M1Hpt-20 SD Reanalysis M1Hpt-21 Reanalysis M1Hpt-22 Reanalysis M1Hpt-14 Reanalysis M1Hpt-21 Initial M1Hpt-22 Initial M1Hpt-14 Initial 62675-1-BKS BKS 62675-1-BKS BSD M1Hpt-20 Initial M1Hpt-21 Initial M1Hpt-22 Initial	16092211-003	1033 W	62687	136073	09/21/2016	09/23/2016 10:46	09/23/2016 23:38
62687-1-BKS BKS 62687-1-BLK BLK MIHpt-20 S Reanalysis MIHpt-20 SD Reanalysis MIHpt-20 SD Reanalysis MIHpt-21 Reanalysis MIHpt-21 Reanalysis MIHpt-21 Reanalysis MIHpt-21 Initial MIHpt-21 Initial MIHpt-21 Initial MIHpt-14 Initial 62675-1-BKS BKS 62675-1-BKS BSD MIHpt-20 Initial MIHpt-21 Initial	16092211-004	1033 W	62687	136073	09/21/2016	09/23/2016 10:46	09/23/2016 23:45
62687-1-BLK M1Hpt-20 S MS M1Hpt-20 SD MSD M1Hpt-20 SD MSD M1Hpt-20 SD MSD M1Hpt-20 SD MSD M1Hpt-21 Reanalysis M1Hpt-21 Reanalysis M1Hpt-14 Reanalysis M1Hpt-21 Initial M1Hpt-22 Initial M1Hpt-24 Initial M1Hpt-15 Initial M1Hpt-16 Initial M1Hpt-17 Initial M1Hpt-18 BKS 62675-1-BKS 62675-1-BSD M1Hpt-20 Initial M1Hpt-14 Initial M1Hpt-14 Initial M1Hpt-14 Initial M1Hpt-14 Initial M1Hpt-14 Initial M1Hpt-16 Initial M1Hpt-20 Initial	62687-1-BKS	1033 W	62687	136073		09/23/2016 10:46	09/23/2016 22:12
M1Hpt-20 S MSD M1Hpt-20 SD MSD M1Hpt-20 SD M1Hpt-20 SD M1Hpt-21 M1Hpt-22 M1Hpt-14 M1Hpt-14 M1Hpt-21 M1Hpt-22 M1Hpt-24 M1Hpt-25 M1Hpt-26 M1Hpt-14 M1Hpt-20 M1	62687-1-BLK	1033 W	62687	136073	!	09/23/2016 10:46	09/23/2016 22:06
M1Hpt-20 SD Reanalysis M1Hpt-20 SD Reanalysis M1Hpt-20 SD Reanalysis M1Hpt-21 Reanalysis M1Hpt-22 Reanalysis M1Hpt-14 Reanalysis M1Hpt-21 Initial M1Hpt-21 Initial M1Hpt-22 Initial M1Hpt-24 BKS 62675-1-BKS 62675-1-BKS 62675-1-BKS M1Hpt-20 Initial M1Hpt-14 Initial M1Hpt-14 Initial M1Hpt-14 Initial M1Hpt-14 Initial M1Hpt-20 Initial M1Hpt-20 Initial	16092211-001 S	1033 W	62687	136073	09/21/2016	09/23/2016 10:46	09/23/2016 22:25
M1Hpt-20 SD Reanalysis M1Hpt-20 SD Reanalysis M1Hpt-21 Reanalysis M1Hpt-21 Reanalysis M1Hpt-14 Reanalysis M1Hpt-20 Initial M1Hpt-21 Initial M1Hpt-21 Reanalysis M1Hpt-21 Enitial M1Hpt-14 Enitial M1Hpt-14 Enitial M1Hpt-14 Initial 62675-1-BKS BKS 62675-1-BSD BSD M1Hpt-20 Initial	is 16092211-001 S	1033 W	62687	136073	09/21/2016	09/23/2016 10:46	09/23/2016 22:25
M1Hpt-20 SD Reanalysis M1Hpt-21 Reanalysis M1Hpt-22 Reanalysis M1Hpt-14 Reanalysis M1Hpt-20 Initial M1Hpt-21 Initial M1Hpt-22 Initial M1Hpt-14 BKS 62675-1-BKS BKS 62675-1-BKS BKS M1Hpt-20 Initial M1Hpt-14 Initial	16092211-001 SD	1033 W	62687	136073	09/21/2016	09/23/2016 10:46	09/23/2016 22:56
M1Hpt-20 Reanalysis M1Hpt-21 Reanalysis M1Hpt-22 Reanalysis M1Hpt-14 Reanalysis M1Hpt-21 Initial M1Hpt-22 Initial M1Hpt-14 BKS 62675-1-BKS BKS 62675-1-BLK BLK 62675-1-BSD BSD M1Hpt-20 Initial	is 16092211-001 SD	1033 W	62687	136073	09/21/2016	09/23/2016 10:46	09/23/2016 22:56
M1Hpt-21 Reanalysis M1Hpt-14 Reanalysis M1Hpt-14 Reanalysis M1Hpt-21 Initial M1Hpt-22 Initial M1Hpt-22 Initial M1Hpt-14 Initial 62675-1-BKS BKS 62675-1-BLK BLK 62675-1-BSD BSD M1Hpt-20 Initial	is 16092211-001	1033 W	62687	136095	09/21/2016	09/23/2016 10:46	09/26/2016 14:58
M1Hpt-22 Reanalysis M1Hpt-14 Reanalysis M1Hpt-20 Initial M1Hpt-21 Initial M1Hpt-14 Initial 62675-1-BKS BKS 62675-1-BKS BKS 62675-1-BSD BSD M1Hpt-20 Initial M1Hpt-20 Initial	is 16092211-002	1033 W	62687	136095	09/21/2016	09/23/2016 10:46	09/26/2016 15:04
M1Hpt-14 Reanalysis M1Hpt-20 Initial M1Hpt-22 Initial M1Hpt-14 Initial 62675-1-BKS BKS 62675-1-BLK BLK 62675-1-BSD BSD M1Hpt-20 Initial		1033 W	62687	136095	09/21/2016	09/23/2016 10:46	09/26/2016 15:10
M1Hpt-20 Initial M1Hpt-21 Initial M1Hpt-14 Initial 62675-1-BKS BKS 62675-1-BLK BLK 62675-1-BSD BSD M1Hpt-20 Initial	is 16092211-004	1033 W	62687	136095	09/21/2016	09/23/2016 10:46	09/26/2016 15:16
M1Hpt-21 Initial M1Hpt-14 Initial 62675-1-BKS BKS 62675-1-BLK BLK 62675-1-BSD BSD M1Hpt-20 Initial M1Hpt-21 Initial	16092211-001	1045 W	62675	136055	09/21/2016	09/23/2016 08:10	09/26/2016 00:32
M1Hpt-22 Initial M1Hpt-14 Initial 62675-1-BKS BKS 62675-1-BK BLK M1Hpt-20 Initial M1Hpt-21 Initial	16092211-002	1045 W	62675	136055	09/21/2016	09/23/2016 08:10	09/26/2016 00:57
M1Hpt-14 Initial 62675-1-BKS BKS 62675-1-BLK BLK 62675-1-BSD BSD M1Hpt-20 Initial M1Hpt-21 Initial	16092211-003	1045 W	62675	136055	09/21/2016	09/23/2016 08:10	09/26/2016 00:57
62675-1-BKS BKS 62675-1-BLK BLK 62675-1-BSD BSD M1Hpt-20 Initial	16092211-004	1045 W	62675	136055	09/21/2016	09/23/2016 08:10	09/26/2016 01:22
62675-1-BLK BLK 62675-1-BSD BSD M1Hpt-20 Initial M1Hpt-21 Initial	62675-1-BKS	1045 W	62675	136055	!	09/23/2016 08:10	09/23/2016 11:50
62675-1-BSD BSD M1Hpt-20 Initial M1Hpt-21 Initial	62675-1-BLK	1045 W	62675	136055		09/23/2016 08:10	09/23/2016 11:50
M1Hpt-20 Initial M1Hpt-21 Initial	62675-1-BSD	1045 W	62675	136055		09/23/2016 08:10	09/23/2016 12:15
Initial	16092211-001	1035 W	62688	136045	09/21/2016	09/23/2016 09:10	09/23/2016 12:16
	16092211-002	1035 W	62688	136045	09/21/2016	09/23/2016 09:10	09/23/2016 13:33
M1Hpt-22 Initial 160922	16092211-003	1035 W	62688	136045	09/21/2016	09/23/2016 09:10	09/23/2016 12:42
M1Hpt-14 Initial 160922	16092211-004	1035 W	62688	136045	09/21/2016	09/23/2016 09:10	09/23/2016 13:07
62688-2-BKS BKS 62688-	62688-2-BKS	1035 W	62688	136045		09/23/2016 09:10	09/23/2016 11:25
62688-2-BLK BLK 62688-	62688-2-BLK	1035 W	62688	136045		09/23/2016 09:10	09/23/2016 11:00
M1Hpt-20 S MS 160922	16092211-001 S	1035 W	62688	136045	09/21/2016	09/23/2016 09:10	09/23/2016 13:58

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Analytical Data Package Information Summary

Work Order(s): 16092211

Report Prepared For: Icor Ltd., Middleburg, VA Project Name: Robinson Terminal North Project Manager: Mike Bruzzesi

Method	Client Sample Id	Analysis Type	Lab Sample Id	Analyst	Mtx	Prep Batch	Analytical Batch	Sampled	Prepared	Analyzed
SW-846 8015C	M1Hpt-20 SD	MSD	16092211-001 SD	1035	≽	62688	136045	09/21/2016	09/23/2016 09:10	09/23/2016 14:24
SW-846 8081 B	M1Hpt-20	Initial	16092211-001	1029	M	62692	136106	09/21/2016	09/23/2016 15:44	09/26/2016 13:14
	M1Hpt-21	Initial	16092211-002	1029	×	62692	136106	09/21/2016	09/23/2016 15:44	09/26/2016 13:43
	M1Hpt-22	Initial	16092211-003	1029	×	62692	136106	09/21/2016	09/23/2016 15:44	09/26/2016 14:11
	M1Hpt-14	Initial	16092211-004	1029	W	62692	136106	09/21/2016	09/23/2016 15:44	09/26/2016 18:25
	62692-1-BKS	BKS	62692-1-BKS	1029	×	62692	136106		09/23/2016 15:44	09/26/2016 23:05
	62692-1-BLK	BLK	62692-1-BLK	1029	M	62692	136106		09/23/2016 15:44	09/26/2016 22:09
	62692-1-BSD	BSD	62692-1-BSD	1029	M	62692	136106	-	09/23/2016 15:44	09/26/2016 23:33
SW-846 8082 A	M1Hpt-20	Initial	16092211-001	1029	M	62693	136124	09/21/2016	09/23/2016 15:46	09/26/2016 10:18
	M1Hpt-21	Initial	16092211-002	1029	×	62693	136124	09/21/2016	09/23/2016 15:46	09/26/2016 10:47
	M1Hpt-22	Initial	16092211-003	1029	M	62693	136124	09/21/2016	09/23/2016 15:46	09/26/2016 11:16
	M1Hpt-14	Initial	16092211-004	1029	×	62693	136124	09/21/2016	09/23/2016 15:46	09/26/2016 12:15
	62693-1-BKS	BKS	62693-1-BKS	1029	A	62693	136124	1	09/23/2016 15:46	09/26/2016 10:18
	62693-1-BLK	BLK	62693-1-BLK	1029	\bowtie	62693	136124		09/23/2016 15:46	09/26/2016 09:49
	62693-1-BSD	BSD	62693-1-BSD	1029	\bowtie	62693	136124		09/23/2016 15:46	09/26/2016 10:47
SW-846 8151 A	M1Hpt-20	Initial	16092211-001	1029	\bowtie	62706	136151	09/21/2016	09/26/2016 10:57	09/27/2016 15:33
	M1Hpt-21	Initial	16092211-002	1029	M	62706	136151	09/21/2016	09/26/2016 10:57	09/29/2016 12:05
	M1Hpt-22	Initial	16092211-003	1029	M	62706	136151	09/21/2016	09/26/2016 10:57	09/29/2016 12:38
	M1Hpt-14	Initial	16092211-004	1029	\bowtie	62706	136151	09/21/2016	09/26/2016 10:57	09/29/2016 13:11
	62706-1-BKS	BKS	62706-1-BKS	1029	A	62706	136151	1	09/26/2016 10:57	09/27/2016 13:56
	62706-1-BLK	BLK	62706-1-BLK	1029	A	62706	136151	1	09/26/2016 10:57	09/27/2016 13:23
	62706-1-BSD	BSD	62706-1-BSD	1029	M	62706	136151		09/26/2016 10:57	09/27/2016 14:28
SW-846 8260 B	M1Hpt-20	Initial	16092211-001	1011	×	62733	136140	09/21/2016	09/27/2016 11:17	09/27/2016 18:41
	M1Hpt-21	Initial	16092211-002	1011	\bowtie	62733	136140	09/21/2016	09/27/2016 11:17	09/27/2016 19:02
	M1Hpt-22	Initial	16092211-003	1011	\bowtie	62733	136140	09/21/2016	09/27/2016 11:17	09/27/2016 19:24
	M1Hpt-14	Initial	16092211-004	1011	\bowtie	62733	136140	09/21/2016	09/27/2016 11:17	09/27/2016 19:46
	62733-1-BKS	BKS	62733-1-BKS	1011	≽	62733	136140		09/27/2016 11:17	09/27/2016 12:15

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Analytical Data Package Information Summary

Work Order(s): 16092211

Report Prepared For: Icor Ltd., Middleburg, VA Project Name: Robinson Terminal North Project Manager: Mike Bruzzesi

Method	Client Sample Id	Analysis Type	Client Sample Id Analysis Type Lab Sample Id Analyst Mtx Prep Batch Analytical Batch Sampled	Analyst	Mtx	Prep Batch	Analytical Batch	Sampled	Prepared	Analyzed
SW-846 8260 B	62733-1-BLK	BLK	62733-1-BLK	1011	≽	62733	136140		09/27/2016 11:17	09/27/2016 12:57
	M1Hpt-08 S	MS	16092115-005 S	1011	M	62733	136140	09/21/2016	09/27/2016 11:17	09/27/2016 16:10
	M1Hpt-08 SD	MSD	16092115-005 SD	1011	\bowtie	62733	136140	09/21/2016	09/27/2016 11:17	09/27/2016 16:32
SW-846 8270 C	M1Hpt-20	Initial	16092211-001	1055	×	62695	136130	09/21/2016	09/26/2016 09:06	09/26/2016 19:38
	M1Hpt-21	Initial	16092211-002	1055	M	62695	136130	09/21/2016	09/26/2016 09:06	09/26/2016 20:04
	M1Hpt-22	Initial	16092211-003	1055	M	62695	136130	09/21/2016	09/26/2016 09:06	09/26/2016 20:31
	M1Hpt-14	Initial	16092211-004	1055	×	62695	136130	09/21/2016	09/26/2016 09:06	09/26/2016 20:58
	62695-1-BKS	BKS	62695-1-BKS	1055	M	62695	136130		09/26/2016 09:06	09/26/2016 16:57
	62695-1-BLK	BLK	62695-1-BLK	1055	×	62695	136130		09/26/2016 09:06	09/26/2016 16:30
	62695-1-BSD	BSD	62695-1-BSD	1055	\bowtie	62695	136130		09/26/2016 09:06	09/26/2016 17:24
	M1Hpt-21	Reanalysis	16092211-002	1055	×	62695	136130	09/21/2016	09/26/2016 09:06	09/27/2016 11:57

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			Robinson	l erminal North		
Analytical Method Seq Number: PSS Sample ID:	1: SW-846 8081 B 136106 16092211-001		Matrix:	Ground Water	Prep Method Date Prep	
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
Decachlorobipheny Tetrachloro-m-xyle		91 49		43-150 40-126	% %	09/26/16 13:14 09/26/16 13:14
Analytical Method Seq Number: PSS Sample ID:	l: SW-846 8082 A 136124 16092211-001		Matrix:	Ground Water	Prep Method Date Prep	
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
Decachlorobipheny Tetrachloro-m-xyle		72 63		39-154 35-131	% %	09/26/16 10:18 09/26/16 10:18
Analytical Method Seq Number: PSS Sample ID:	I: SW-846 8151 A 136151 16092211-001		Matrix:	Ground Water	Prep Method Date Prep	
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
2,4-Dichlorophenyl	acetic Acid	101		64-126	%	09/27/16 15:33
Analytical Method Seq Number: PSS Sample ID:	I: SW-846 8015 C 136055 16092211-001		Matrix:	Ground Water	Prep Method Date Prep	
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
o-Terphenyl		74		46-111	%	09/26/16 00:32
Analytical Method Seq Number: PSS Sample ID:	I: SW-846 8270 C 136130 16092211-001		Matrix:	Ground Water	Prep Method Date Prep	
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
2-Fluorobiphenyl 2-Fluorophenol Nitrobenzene-d5 Phenol-d6 Terphenyl-D14 2,4,6-Tribromophel	nol	73 68 69 68 90 76		35-107 32-106 34-123 36-111 43-143 26-122	% % % % %	09/26/16 19:38 09/26/16 19:38 09/26/16 19:38 09/26/16 19:38 09/26/16 19:38 09/26/16 19:38

Analytical Method: Seq Number: PSS Sample ID:	SW-846 8015C 136045 16092211-001		Matrix:	Ground Water	Prep Method: Date Prep:	
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
a,a,a-Trifluorotoluer	ne	82		55-114	%	09/23/16 12:16
Analytical Method: Seq Number: PSS Sample ID:	SW-846 8260 B 136140 16092211-001		Matrix:	Ground Water	Prep Method: Date Prep:	SW5030B 09/27/2016
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
4-Bromofluorobenze Dibromofluorometha Toluene-D8		99 96 105		86-111 91-119 90-117	%	09/27/16 18:41 09/27/16 18:41 09/27/16 18:41
Analytical Method: Seq Number: PSS Sample ID:	SW-846 8081 B 136106 16092211-002		Matrix:	Ground Water	Prep Method: Date Prep:	SW3510C 09/23/2016
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
Decachlorobiphenyl Tetrachloro-m-xylen		83 57		43-150 40-126		09/26/16 13:43 09/26/16 13:43
Analytical Method: Seq Number: PSS Sample ID:	SW-846 8082 A 136124 16092211-002		Matrix:	Ground Water	Prep Method: Date Prep:	SW3510C 09/23/2016
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
Decachlorobiphenyl Tetrachloro-m-xylen		74 103		39-154 35-131		09/26/16 10:47 09/26/16 10:47
Analytical Method: Seq Number: PSS Sample ID:	SW-846 8151 A 136151 16092211-002		Matrix:	Ground Water	Prep Method: Date Prep:	SW8151A_PREP 09/26/2016
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
2,4-Dichlorophenyla	cetic Acid	0	*	64-126	%	09/29/16 12:05

Analytical Method: Seq Number: PSS Sample ID:	SW-846 8015 C 136055 16092211-002		Matrix:	Ground Water	Prep Method: Date Prep:	
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
o-Terphenyl		94		46-111	%	09/26/16 00:57
Analytical Method: Seq Number: PSS Sample ID:	SW-846 8270 C 136130 16092211-002		Matrix:	Ground Water	Prep Method: Date Prep:	
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
2-Fluorobiphenyl 2-Fluorophenol Nitrobenzene-d5 Phenol-d6 Terphenyl-D14 2,4,6-Tribromophen	ol	65 61 62 61 96 80		35-107 32-106 34-123 36-111 43-143 26-122	% % % % %	09/26/16 20:04 09/26/16 20:04 09/26/16 20:04 09/26/16 20:04 09/26/16 20:04 09/26/16 20:04
Analytical Method: Seq Number: PSS Sample ID:	SW-846 8015C 136045 16092211-002		Matrix:	Ground Water	Prep Method: Date Prep:	
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
a,a,a-Trifluorotoluer	ne	80		55-114	%	09/23/16 13:33
Analytical Method: Seq Number: PSS Sample ID:	SW-846 8260 B 136140 16092211-002		Matrix:	Ground Water	Prep Method: Date Prep:	
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
4-Bromofluorobenzo Dibromofluorometha Toluene-D8		97 96 106		86-111 91-119 90-117	% % %	09/27/16 19:02 09/27/16 19:02 09/27/16 19:02
Analytical Method: Seq Number: PSS Sample ID:	SW-846 8081 B 136106 16092211-003		Matrix:	Ground Water	Prep Method: Date Prep:	
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
Decachlorobiphenyl Tetrachloro-m-xyler		90 60		43-150 40-126	% %	09/26/16 14:11 09/26/16 14:11

			Robinson	reminal North		
Analytical Method Seq Number: PSS Sample ID:	1: SW-846 8082 A 136124 16092211-003		Matrix:	Ground Water	Prep Method: Date Prep	
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
Decachlorobipheny Tetrachloro-m-xyle		72 55		39-154 35-131	% %	09/26/16 11:16 09/26/16 11:16
Analytical Method Seq Number: PSS Sample ID:	I: SW-846 8151 A 136151 16092211-003		Matrix:	Ground Water	Prep Method: Date Prep:	
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
2,4-Dichlorophenyl	acetic Acid	111		64-126	%	09/29/16 12:38
Analytical Method Seq Number: PSS Sample ID:	1: SW-846 8015 C 136055 16092211-003		Matrix:	Ground Water	Prep Method: Date Prep:	
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
o-Terphenyl		82		46-111	%	09/26/16 00:57
Analytical Method Seq Number: PSS Sample ID:	I: SW-846 8270 C 136130 16092211-003		Matrix:	Ground Water	Prep Method: Date Prep:	
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
2-Fluorobiphenyl 2-Fluorophenol Nitrobenzene-d5 Phenol-d6 Terphenyl-D14 2,4,6-Tribromophe	nol	72 67 68 67 95 79		35-107 32-106 34-123 36-111 43-143 26-122	% % % % %	09/26/16 20:31 09/26/16 20:31 09/26/16 20:31 09/26/16 20:31 09/26/16 20:31 09/26/16 20:31
Analytical Method Seq Number: PSS Sample ID:	1: SW-846 8015C 136045 16092211-003		Matrix:	Ground Water	Prep Method: Date Prep	
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
a,a,a-Trifluorotolue	ene	85		55-114	%	09/23/16 12:42

		110	1001110011	Terriniai North		
Analytical Method Seq Number: PSS Sample ID:	: SW-846 8260 B 136140 16092211-003		Matrix:	Ground Water	Prep Method: Date Prep:	
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
4-Bromofluorobenz Dibromofluorometh Toluene-D8		103 95 105		86-111 91-119 90-117	% % %	09/27/16 19:24 09/27/16 19:24 09/27/16 19:24
Analytical Method Seq Number: PSS Sample ID:	: SW-846 8081 B 136106 16092211-004		Matrix:	Ground Water	Prep Method: Date Prep:	
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
Decachlorobipheny Tetrachloro-m-xyler		107 58		43-150 40-126	% %	09/26/16 18:25 09/26/16 18:25
Analytical Method Seq Number: PSS Sample ID:	: SW-846 8082 A 136124 16092211-004		Matrix:	Ground Water	Prep Method: Date Prep:	
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
Decachlorobipheny Tetrachloro-m-xyler		75 60		39-154 35-131	% %	09/26/16 12:15 09/26/16 12:15
Analytical Method Seq Number: PSS Sample ID:	: SW-846 8151 A 136151 16092211-004		Matrix:	Ground Water	Prep Method: Date Prep:	
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
2,4-Dichlorophenyla	acetic Acid	127	*	64-126	%	09/29/16 13:11
Analytical Method Seq Number: PSS Sample ID:	: SW-846 8015 C 136055 16092211-004		Matrix:	Ground Water	Prep Method: Date Prep:	
Surrogate		%Rec	Flag	Limits	Units	Analysis Date
o-Terphenyl		84		46-111	%	09/26/16 01:22

QC Summary 16092211

Icor Ltd. Robinson Terminal North

Analytical Method	SW-846 8270 C			Prep Method:	SW3510C
Seq Number:	136130	Matrix:	Ground Water	Date Prep:	09/26/2016

PSS Sample ID: 16092211-004

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
2-Fluorobiphenyl	69		35-107	%	09/26/16 20:58
2-Fluorophenol	64		32-106	%	09/26/16 20:58
Nitrobenzene-d5	64		34-123	%	09/26/16 20:58
Phenol-d6	66		36-111	%	09/26/16 20:58
Terphenyl-D14	89		43-143	%	09/26/16 20:58
2,4,6-Tribromophenol	80		26-122	%	09/26/16 20:58

Analytical Method: SW-846 8015C Prep Method: SW5030B

 Seq Number:
 136045
 Matrix:
 Ground Water
 Date Prep:
 09/23/2016

 PSS Sample ID:
 16092211-004

Surrogate %Rec Flag Limits Units Analysis Date a,a,a-Trifluorotoluene 82 55-114 % 09/23/16 13:07

Analytical Method: SW-846 8260 B Prep Method: SW5030B

Seq Number: 136140 Matrix: Ground Water Date Prep: 09/27/2016

PSS Sample ID: 16092211-004

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	105		86-111	%	09/27/16 19:46
Dibromofluoromethane	97		91-119	%	09/27/16 19:46
Toluene-D8	110		90-117	%	09/27/16 19:46

F = RPD exceeded the laboratory control limits

X = Recovery of MS, MSD or both outside of QC Criteria

H= Recovery of BS,BSD or both exceeded the laboratory control limits

L = Recovery of BS,BSD or both below the laboratory control limits

QC Summary 16092211

Icor Ltd. Robinson Terminal North

Analytical Method: SW-846 6020 APrep Method:SW3010ASeq Number:136073Matrix: WaterDate Prep:09/23/16

MB Sample Id: 62687-1-BLK LCS Sample Id: 62687-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Analysis Flag Date
Antimony	<5.000	40.00	41.71	104	80-120	ug/L	09/23/16 22:12
Arsenic	<1.000	40.00	39.37	98	80-120	ug/L	09/23/16 22:12
Beryllium	<1.000	40.00	45.07	113	80-120	ug/L	09/23/16 22:12
Cadmium	<1.000	40.00	42.47	106	80-120	ug/L	09/23/16 22:12
Chromium	<1.000	40.00	38.39	96	80-120	ug/L	09/23/16 22:12
Copper	<1.000	40.00	37.66	94	80-120	ug/L	09/23/16 22:12
Lead	<1.000	40.00	40.48	101	80-120	ug/L	09/23/16 22:12
Mercury	<0.2000	1.000	0.9900	99	80-120	ug/L	09/23/16 22:12
Nickel	<1.000	40.00	38.18	95	80-120	ug/L	09/23/16 22:12
Selenium	<1.000	40.00	41.97	105	80-120	ug/L	09/23/16 22:12
Silver	<1.000	40.00	41.91	105	80-120	ug/L	09/23/16 22:12
Thallium	<1.000	40.00	37.01	93	80-120	ug/L	09/23/16 22:12
Zinc	<20.00	200	188.1	94	80-120	ug/L	09/23/16 22:12

Analytical Method: SW-846 6020 A
Seq Number: 136073 Matrix: Ground Water Prep: 09/23/16

Parent Sample Id: 16092211-001 MS Sample Id: 16092211-001 S MSD Sample Id: 16092211-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Antimony	<5.000	40.00	44.35	111	42.92	107	75-125	3	25	ug/L	09/23/16 22:25	
Arsenic	13.48	40.00	55.45	105	51.81	96	75-125	7	25	ug/L	09/23/16 22:25	
Beryllium	<1.000	40.00	46.67	117	45.05	113	75-125	4	25	ug/L	09/23/16 22:25	
Cadmium	7.420	40.00	49.64	106	47.40	100	75-125	5	25	ug/L	09/23/16 22:25	
Chromium	<1.000	40.00	39.90	100	37.22	93	75-125	7	25	ug/L	09/23/16 22:25	
Copper	12.05	40.00	49.43	93	46.69	87	75-125	6	25	ug/L	09/23/16 22:25	
Lead	2.000	40.00	44.61	107	43.65	104	75-125	2	25	ug/L	09/23/16 22:25	
Mercury	<0.2000	1.000	1.150	115	1.140	114	75-125	1	25	ug/L	09/23/16 22:25	
Nickel	4.950	40.00	42.59	94	39.69	87	75-125	7	25	ug/L	09/23/16 22:25	
Selenium	8.300	40.00	44.84	91	44.38	90	75-125	1	25	ug/L	09/23/16 22:25	
Silver	<1.000	40.00	40.49	101	39.61	99	75-125	2	25	ug/L	09/23/16 22:25	
Thallium	<1.000	40.00	40.14	100	38.68	97	75-125	4	25	ug/L	09/23/16 22:25	
Zinc	6895	200	7698	402	7351	228	75-125	5	25	ug/L	09/23/16 22:25	X

QC Summary 16092211

Icor Ltd. Robinson Terminal North

Analytical Method	: SW-846 8081 B							Pre	ep Metho	d: SW	/3510C	
Seq Number:	136106			Matrix:	Water				Date Pre	p: 09/	23/16	
MB Sample Id:	62692-1-BLK		LCS San	nple ld:	62692-1-	BKS		LCSD	Sample	ld: 626	892-1-BSD	
Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
alpha-BHC	< 0.04000	0.2000	0.1865	93	0.1968	98	57-118	5	20	ug/L	09/26/16 23:05	
gamma-BHC (Lindan	e) <0.04000	0.2000	0.1797	90	0.1946	97	57-120	8	20	ug/L	09/26/16 23:05	
beta-BHC	<0.04000	0.2000	0.1749	87	0.1903	95	56-113	8	20	ug/L	09/26/16 23:05	
delta-BHC	<0.04000	0.2000	0.2028	101	0.2250	113	48-125	10	20	ug/L	09/26/16 23:05	
Heptachlor	<0.04000	0.2000	0.1783	89	0.2046	102	49-127	14	20	ug/L	09/26/16 23:05	
Aldrin	<0.04000	0.2000	0.1772	89	0.1982	99	57-119	11	20	ug/L	09/26/16 23:05	
Heptachlor epoxide	< 0.04000	0.2000	0.1872	94	0.2102	105	62-116	12	20	ug/L	09/26/16 23:05	
gamma-Chlordane	<0.04000	0.2000	0.1899	95	0.2158	108	59-116	13	20	ug/L	09/26/16 23:05	
alpha-Chlordane	< 0.04000	0.2000	0.1712	86	0.1955	98	68-109	13	20	ug/L	09/26/16 23:05	
4,4-DDE	<0.04000	0.2000	0.1672	84	0.1898	95	49-122	13	20	ug/L	09/26/16 23:05	
Endosulfan I	<0.04000	0.2000	0.1948	97	0.2284	114	71-108	16	20	ug/L	09/26/16 23:05	Н
Dieldrin	<0.04000	0.2000	0.1915	96	0.2251	113	60-117	16	20	ug/L	09/26/16 23:05	
Endrin	<0.04000	0.2000	0.1650	83	0.2095	105	48-132	24	20	ug/L	09/26/16 23:05	F
4,4-DDD	<0.04000	0.2000	0.1824	91	0.2115	106	48-128	15	20	ug/L	09/26/16 23:05	
Endosulfan II	<0.04000	0.2000	0.2115	106	0.2536	127	59-118	18	20	ug/L	09/26/16 23:05	Н
4,4-DDT	<0.04000	0.2000	0.1772	89	0.2376	119	29-147	29	20	ug/L	09/26/16 23:05	F
Endrin aldehyde	<0.04000	0.2000	0.1684	84	0.1999	100	54-122	17	20	ug/L	09/26/16 23:05	
Methoxychlor	<0.04000	0.2000	0.1699	85	0.2298	115	26-156	30	20	ug/L	09/26/16 23:05	F
Endosulfan sulfate	<0.04000	0.2000	0.2121	106	0.2557	128	57-130	19	20	ug/L	09/26/16 23:05	
Endrin ketone	<0.04000	0.2000	0.2206	110	0.2678	134	55-123	19	20	ug/L	09/26/16 23:05	Н
Surrogate	MB %Rec	MB Flag	· ·	.CS sult	LCS Flag	LCS Resu			mits	Units	Analysis Date	
Decachlorobiphenyl	114		•	72		111		43	3-150	%	09/26/16 23:05	5

 Analytical Method: SW-846 8082 A
 Prep Method: SW3510C

 Seq Number:
 136124
 Matrix: Water
 Date Prep: 09/23/16

 MB Sample Id:
 62693-1-BLK
 LCS Sample Id: 62693-1-BKS
 LCSD Sample Id: 62693-1-BSD

81

98

Tetrachloro-m-xylene

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
PCB-1016	< 0.5000	5.000	3.223	64	3.479	70	56-124	8	20	ug/L	09/26/16 10:18	
PCB-1260	< 0.5000	5.000	4.075	82	4.486	90	61-103	10	20	ug/L	09/26/16 10:18	
Surrogate	MB %Rec	MB Flag		CS sult	LCS Flag	LCS Resu			mits	Units	Analysis Date	
Decachlorobiphenyl	81		7	75		89		39	9-154	%	09/26/16 10:18	3
Tetrachloro-m-xylene	82		7	71		85		35	5-131	%	09/26/16 10:18	3

97

40-126

09/26/16 23:05

QC Summary 16092211

Icor Ltd. Robinson Terminal North

Analytical Method	: SW-846 8151 A			Prep Method:	SW8151A_PREP
Seq Number:	136151	Matrix:	Water	Date Prep:	09/26/16
MB Sample Id:	62706-1-BLK	LCS Sample Id:	62706-1-BKS	LCSD Sample Id:	62706-1-BSD

					•									
Parar	meter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag	
Dalap	oon	<4.550	13.65	10.59	78	7.758	57	33-127	31	20	ug/L	09/27/16 13:56	6 F	
Dican	nba	<0.1880	0.5640	0.6157	109	0.5659	100	66-121	8	20	ug/L	09/27/16 13:56	;	
MCPI	P	<188	564	425.8	75	423.2	75	49-121	1	20	ug/L	09/27/16 13:56	;	
MCP	A	<186	558	422.7	76	420.5	75	50-123	1	20	ug/L	09/27/16 13:56	3	
Dichlo	oroprop	<1.880	5.640	5.769	102	5.750	102	79-132	0	20	ug/L	09/27/16 13:56	;	
2,4-D		<1.880	5.640	5.772	102	5.691	101	70-104	1	20	ug/L	09/27/16 13:56	;	
2,4,5-	-TP (Silvex)	<0.1900	0.5700	0.5007	88	0.4997	88	59-122	0	20	ug/L	09/27/16 13:56	;	
2,4,5-	-T	<0.1900	0.5700	0.4826	85	0.4665	82	49-136	3	20	ug/L	09/27/16 13:56	;	
Dinos	seb	< 0.9500	2.850	2.138	75	2.026	71	48-110	5	20	ug/L	09/27/16 13:56	;	
2,4-D	В	<1.920	5.760	5.341	93	4.728	82	49-128	12	20	ug/L	09/27/16 13:56	;	
Surro	ogate	MB %Rec	MB Flag		.CS sult	LCS Flag	LCS Resu			imits	Units	Analysis Date		
2,4-D	ichlorophenylacetic A	cid 106		1	01		108	}	64	1-126	%	09/27/16 13:56	6	

 Analytical Method: SW-846 8015 C
 Prep Method: SW3510C

 Seq Number:
 136055
 Matrix: Water
 Date Prep: 09/23/16

 MB Sample Id:
 62675-1-BLK
 LCS Sample Id: 62675-1-BKS
 LCSD Sample Id: 62675-1-BSD

МВ %RPD RPD LCS LCS Spike Units **Analysis** LCSD LCSD Limits **Parameter** Flag Result Amount Result %Rec Limit Date Result %Rec TPH-DRO (Diesel Range Organics) < 0.1000 0.8225 0.8037 80 41-123 20 09/23/16 11:50 mg/L MB MB LCS **LCS LCSD LCSD** Limits Units **Analysis** Surrogate Flag Flag Date %Rec Flag Result Result

o-Terphenyl 92 79 75 46-111 % 09/23/16 11:50

Icor Ltd. Robinson Terminal North

Analytical Method: SW-846 8270 C Prep Method: SW3510C Seq Number: 136130 Matrix: Water Date Prep: 09/26/16 LCS Sample Id: 62695-1-BKS LCSD Sample Id: 62695-1-BSD MR Sample Id: 62695-1-BLK

MB Sample Id:	62695-1-BLK		LCS San	nple Id:	62695-1-	BKS		LCSD	Sample	e ld: 626	895-1-BSD	
Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Acenaphthene	<5.000	40.00	33.04	83	33.33	83	67-110	1	20	ug/L	09/26/16 16:57	7
Acenaphthylene	<5.000	40.00	34.62	87	34.80	87	69-106	1	20	ug/L	09/26/16 16:57	7
Acetophenone	<5.000	40.00	30.62	77	30.56	76	67-107	0	20	ug/L	09/26/16 16:57	7
Anthracene	<5.000	40.00	33.81	85	33.98	85	79-108	1	20	ug/L	09/26/16 16:57	7
Atrazine	<5.000	40.00	27.40	69	27.15	68	17-98	1	20	ug/L	09/26/16 16:57	
Benzo(a)anthracene	<5.000	40.00	33.12	83	33.21	83	76-109	0	20	ug/L	09/26/16 16:57	7
Benzo(a)pyrene	<5.000	40.00	34.58	86	35.09	88	76-114	1	20	ug/L	09/26/16 16:57	7
Benzo(b)fluoranthene	<5.000	40.00	38.27	96	38.23	96	67-121	0	20	ug/L	09/26/16 16:57	
Benzo(g,h,i)perylene	<5.000	40.00	25.03	63	27.69	69	75-107	10	20	ug/L	09/26/16 16:57	7 L
Benzo(k)fluoranthene	<5.000	40.00	37.82	95	38.20	96	62-132	1	20	ug/L	09/26/16 16:57	7
Biphenyl (Diphenyl)	<5.000	40.00	30.80	77	30.97	77	71-108	1	20	ug/L	09/26/16 16:57	7
Butyl benzyl phthalate	<5.000	40.00	38.71	97	39.44	99	74-117	2	20	ug/L	09/26/16 16:57	7
bis(2-chloroethoxy) me	ethane <5.000	40.00	30.37	76	30.38	76	69-111	0	20	ug/L	09/26/16 16:57	7
bis(2-chloroethyl) ethe	r <5.000	40.00	29.59	74	29.67	74	62-103	0	20	ug/L	09/26/16 16:57	7
bis(2-chloroisopropyl)	ether <5.000	40.00	25.55	64	25.44	64	50-103	0	20	ug/L	09/26/16 16:57	7
bis(2-ethylhexyl) phtha	late <5.000	40.00	38.84	97	39.68	99	78-114	2	20	ug/L	09/26/16 16:57	7
4-Bromophenylphenyl	ether <5.000	40.00	32.19	80	32.18	80	82-108	0	20	ug/L	09/26/16 16:57	7 L
Di-n-butyl phthalate	<5.000	40.00	35.35	88	35.55	89	71-115	1	20	ug/L	09/26/16 16:57	7
Carbazole	<5.000	40.00	34.66	87	34.55	86	52-134	0	20	ug/L	09/26/16 16:57	7
Caprolactam	<5.000	40.00	29.23	73	29.86	75	50-125	2	20	ug/L	09/26/16 16:57	7
4-Chloro-3-methyl phe	nol <5.000	40.00	32.57	81	32.94	82	72-121	1	20	ug/L	09/26/16 16:57	7
4-Chloroaniline	<5.000	40.00	29.06	73	29.50	74	54-103	2	20	ug/L	09/26/16 16:57	7
2-Chloronaphthalene	<5.000	40.00	32.70	82	32.86	82	66-105	0	20	ug/L	09/26/16 16:57	7
2-Chlorophenol	<5.000	40.00	31.76	79	31.68	79	63-109	0	20	ug/L	09/26/16 16:57	7
4-Chlorophenyl Pheny	l ether <5.000	40.00	31.12	78	30.99	77	73-100	0	20	ug/L	09/26/16 16:57	7
Chrysene	<5.000	40.00	33.15	83	33.10	83	78-111	0	20	ug/L	09/26/16 16:57	7
Dibenz(a,h)Anthracene	e <5.000	40.00	24.49	61	27.88	70	76-106	13	20	ug/L	09/26/16 16:57	7 L
Dibenzofuran	<5.000	40.00	32.62	82	32.80	82	70-111	1	20	ug/L	09/26/16 16:57	7
3,3-Dichlorobenzidine	<5.000	40.00	43.17	108	43.29	108	79-132	0	20	ug/L	09/26/16 16:57	7
2,4-Dichlorophenol	<5.000	40.00	32.91	82	33.47	84	65-118	2	20	ug/L	09/26/16 16:57	7
Diethyl phthalate	<5.000	40.00	33.43	84	33.37	83	60-114	0	20	ug/L	09/26/16 16:57	7
Dimethyl phthalate	<5.000	40.00	33.07	83	33.44	84	66-107	1	20	ug/L	09/26/16 16:57	7
2,4-Dimethylphenol	<5.000	40.00	33.62	84	33.22	83	60-119	1	20	ug/L	09/26/16 16:57	7
4,6-Dinitro-2-methyl ph	nenol <5.000	40.00	27.93	70	29.56	74	60-130	6	20	ug/L	09/26/16 16:57	7
2,4-Dinitrophenol	<10.00	40.00	16.58	41	18.81	47	36-136	13	20	ug/L	09/26/16 16:57	7
2,4-Dinitrotoluene	<5.000	40.00	31.73	79	32.25	81	70-119	2	20	ug/L	09/26/16 16:57	7
2,6-Dinitrotoluene	<5.000	40.00	33.12	83	33.84	85	68-117	2	20	ug/L	09/26/16 16:57	7
Fluoranthene	<5.000	40.00	34.39	86	33.89	85	79-112	1	20	ug/L	09/26/16 16:57	7
Fluorene	<5.000	40.00	33.63	84	33.85	85	71-109	1	20	ug/L	09/26/16 16:57	7
Hexachlorobenzene	<5.000	40.00	29.92	75	30.10	75	76-110	1	20	ug/L	09/26/16 16:57	7 L
Hexachlorobutadiene	<5.000	40.00	30.37	76	30.17	75	64-113	1	20	ug/L	09/26/16 16:57	7
Hexachlorocyclopenta	diene <5.000	40.00	32.99	82	32.77	82	49-124	1	20	ug/L	09/26/16 16:57	7
Hexachloroethane	<5.000	40.00	30.29	76	30.16	75	62-105	0	20	ug/L	09/26/16 16:57	7
Indeno(1,2,3-c,d)Pyrer	ne <5.000	40.00	26.16	65	29.29	73	69-120	11	20	ug/L	09/26/16 16:57	7 L
Isophorone	<5.000	40.00	32.01	80	32.39	81	68-108	1	20	ug/L	09/26/16 16:57	7
2-Methylnaphthalene	<5.000	40.00	33.20	83	33.52	84	64-117	1	20	ug/L	09/26/16 16:57	7
2-Methyl phenol	<5.000	40.00	32.36	81	32.71	82	67-111	1	20	ug/L	09/26/16 16:57	
3&4-Methylphenol	<5.000	40.00	32.06	80	32.00	80	67-107	0	20	ug/L	09/26/16 16:57	7
Naphthalene	<5.000	40.00	31.10	78	31.36	78	65-103	1	20	ug/L	09/26/16 16:57	7
2-Nitroaniline	<5.000	40.00	29.79	74	30.26	76	59-114	2	20	ug/L	09/26/16 16:57	7
3-Nitroaniline	<5.000	40.00	31.88	80	32.22	81	60-109	1	20	ug/L	09/26/16 16:57	7

QC Summary 16092211

Icor Ltd. Robinson Terminal North

Analytical Method:	: SW-846 8270 C			Prep Method:	SW3510C
Seq Number:	136130	Matrix:	Water	Date Prep:	09/26/16
MB Sample Id:	62695-1-BLK	LCS Sample Id:	62695-1-BKS	LCSD Sample Id:	62695-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
4-Nitroaniline	<5.000	40.00	33.34	83	33.47	84	51-125	0	20	ug/L	09/26/16 16:57	,
Nitrobenzene	<5.000	40.00	27.66	69	27.79	69	60-107	0	20	ug/L	09/26/16 16:57	7
2-Nitrophenol	<5.000	40.00	33.03	83	34.20	86	65-119	3	20	ug/L	09/26/16 16:57	7
4-Nitrophenol	<5.000	40.00	29.20	73	29.42	74	46-121	1	20	ug/L	09/26/16 16:57	7
N-Nitrosodi-n-propyl amine	<5.000	40.00	30.65	77	30.82	77	60-98	1	20	ug/L	09/26/16 16:57	7
N-Nitrosodiphenylamine	<5.000	40.00	34.54	86	34.74	87	68-106	1	20	ug/L	09/26/16 16:57	7
Di-n-octyl phthalate	<5.000	40.00	41.92	105	42.83	107	69-120	2	20	ug/L	09/26/16 16:57	7
Pentachlorophenol	<5.000	40.00	32.90	82	32.59	81	63-119	1	20	ug/L	09/26/16 16:57	7
Phenanthrene	<5.000	40.00	33.59	84	33.41	84	73-109	1	20	ug/L	09/26/16 16:57	7
Phenol	<5.000	40.00	30.78	77	30.83	77	65-110	0	20	ug/L	09/26/16 16:57	7
Pyrene	<5.000	40.00	33.97	85	34.88	87	78-111	3	20	ug/L	09/26/16 16:57	7
Pyridine	<5.000	40.00	27.80	70	27.94	70	47-105	1	20	ug/L	09/26/16 16:57	7
2,4,5-Trichlorophenol	<5.000	40.00	35.55	89	36.24	91	69-114	2	20	ug/L	09/26/16 16:57	7
2,4,6-Trichlorophenol	<5.000	40.00	34.50	86	34.42	86	68-118	0	20	ug/L	09/26/16 16:57	,
Surrogate	MB %Rec	MB Flag		CS sult	LCS Flag	LCS Resu			mits	Units	Analysis Date	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units	Analysis Date
2-Fluorobiphenyl	89		79		78		35-107	%	09/26/16 16:57
2-Fluorophenol	93		77		77		32-106	%	09/26/16 16:57
Nitrobenzene-d5	86		76		75		34-123	%	09/26/16 16:57
Phenol-d6	86		77		76		36-111	%	09/26/16 16:57
Terphenyl-D14	104		89		90		43-143	%	09/26/16 16:57
2,4,6-Tribromophenol	78		82		81		26-122	%	09/26/16 16:57

Analytical Method: SW-846 8015C Prep Method: SW5030B Seq Number: 136045 Matrix: Water Date Prep: 09/23/16

MB Sample Id: 62688-2-BLK LCS Sample Id: 62688-2-BKS

-					•						
F	arameter	MB Result	Spike Amount	LCS Result	LCS %Red		Limits		Units	Analysis Date	Flag
Т	PH-GRO (Gasoline Range Organic:	<100	5000	4303	8	6	74-132		ug/L	09/23/16 11:25	
S	urrogate	MB %Rec	MB Flag	_	CS sult	LCS Flag		Limits	Units	Analysis Date	
а	,a,a-Trifluorotoluene	79		8	38			55-114	%	09/23/16 11:25	5

Analytical Method: SW-846 8015CPrep Method:SW5030BSeq Number:136045Matrix:Ground WaterDate Prep:09/23/16

Parent Sample Id: 16092211-001 MS Sample Id: 16092211-001 S MSD Sample Id: 16092211-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
TPH-GRO (Gasoline Range Organic:	182.1	5000	5141	99	4769	92	49-137	8	25	ug/L	09/23/16 13:58	
Surrogate				IS sult	MS Flag	MSI			mits	Units	Analysis Date	

 Result
 Flag
 Date

 a,a,a-Trifluorotoluene
 89
 85
 55-114
 % 09/23/16 13:58

QC Summary 16092211

Icor Ltd. Robinson Terminal North

Analytical Method: SW-846 8260 BPrep Method: SW5030BSeq Number:136140Matrix: WaterDate Prep: 09/27/16

MB Sample Id: LCS Sample Id: 62733-1-BKS 62733-1-BLK LCS MB Spike LCS Limits Units **Analysis Parameter** Flag Result **Amount** Result %Rec Date Acetone <10.00 50.00 44.67 89 29-149 ug/L 09/27/16 12:15 Benzene <1.000 50.00 55.39 111 85-123 ug/L 09/27/16 12:15 Bromochloromethane <1.000 50.00 42.37 85 82-136 ug/L 09/27/16 12:15 Bromodichloromethane <1.000 50.00 56.39 113 88-133 ug/L 09/27/16 12:15 Bromoform < 5.000 50.00 48.50 97 80-126 ug/L 09/27/16 12:15 Bromomethane <1.000 50.00 49.92 100 64-139 ug/L 09/27/16 12:15 ug/L 2-Butanone (MEK) <10.00 50.00 28.86 58 39-135 09/27/16 12:15 Carbon Disulfide <10.00 50.00 50.32 101 85-124 ug/L 09/27/16 12:15 Carbon Tetrachloride <1.000 50.00 50.60 101 81-138 ug/L 09/27/16 12:15 Chlorobenzene <1.000 50.00 55.13 110 85-120 ug/L 09/27/16 12:15 50.00 ug/L Chloroethane <1.000 57.19 114 75-129 09/27/16 12:15 <1.000 Chloroform 50.00 41.04 82 85-128 ug/L 09/27/16 12:15 Chloromethane <1.000 50.00 52.63 105 60-139 ug/L 09/27/16 12:15 Cvclohexane <10.00 50.00 56.41 113 55-131 ug/L 09/27/16 12:15 ug/L 1,2-Dibromo-3-Chloropropane <10.00 50.00 45.28 91 69-127 09/27/16 12:15 <1.000 50.56 Dibromochloromethane 50.00 101 82-127 ug/L 09/27/16 12:15 1,2-Dibromoethane (EDB) <1.000 50.00 55.62 82-121 ug/L 09/27/16 12:15 111 1,2-Dichlorobenzene <1.000 50.00 56.73 113 82-123 ug/L 09/27/16 12:15 55.85 1,3-Dichlorobenzene <1.000 50.00 112 81-123 ug/L 09/27/16 12:15 50.00 55.35 1,4-Dichlorobenzene <1.000 111 81-121 ug/L 09/27/16 12:15 Dichlorodifluoromethane <1.000 50.00 62.60 125 69-147 ug/L 09/27/16 12:15 1,1-Dichloroethane <1.000 50.00 40.82 82 83-123 ug/L 09/27/16 12:15 L <1.000 50.00 54.08 108 86-138 ug/L 1,2-Dichloroethane 09/27/16 12:15 50.00 59.42 ug/L 1,1-Dichloroethene <1.000 119 85-127 09/27/16 12:15 cis-1,2-Dichloroethene <1.000 50.00 44.72 89 87-127 ug/L 09/27/16 12:15 1,2-Dichloropropane <1.000 50.00 55.84 112 79-125 ug/L 09/27/16 12:15 <1.000 50.00 53.35 107 79-131 09/27/16 12:15 cis-1,3-Dichloropropene ug/L 50.00 53.97 trans-1,3-Dichloropropene <1.000 108 82-133 ug/L 09/27/16 12:15 trans-1,2-Dichloroethene <1.000 50.00 42.88 86 85-125 ug/L 09/27/16 12:15 58.16 Ethylbenzene <1.000 50.00 116 83-123 ug/L 09/27/16 12:15 ug/L <10.00 50.00 45.02 90 37-137 09/27/16 12:15 2-Hexanone 53.03 Isopropylbenzene <1.000 50.00 106 70-131 ug/L 09/27/16 12:15 Methyl Acetate <10.00 50.00 44.65 89 69-127 ug/L 09/27/16 12:15 59.89 Methylcyclohexane <10.00 50.00 120 75-129 ug/L 09/27/16 12:15 09/27/16 12:15 Methylene Chloride < 1.000 50.00 48.73 97 86-124 ug/L 44.59 09/27/16 12:15 4-Methyl-2-Pentanone < 5.000 50.00 89 39-143 ug/L Methyl-t-butyl ether <1.000 50.00 38.03 76 75-134 ug/L 09/27/16 12:15 Naphthalene <1.000 50.00 48.16 96 61-118 ug/L 09/27/16 12:15 ug/L 50.00 49.71 99 Styrene <1.000 80-120 09/27/16 12:15 1,1,2,2-Tetrachloroethane <1.000 50.00 54.75 110 64-125 ug/L 09/27/16 12:15 Tetrachloroethene <1.000 50.00 59.72 119 83-138 ug/L 09/27/16 12:15 Toluene <1.000 50.00 58.42 117 88-126 ug/L 09/27/16 12:15 1.2.3-Trichlorobenzene <1.000 50.00 49.83 100 75-124 ug/L 09/27/16 12:15 <1.000 50.00 58.26 1,2,4-Trichlorobenzene 117 77-131 ug/L 09/27/16 12:15 1,1,1-Trichloroethane <1.000 50.00 56.66 113 68-146 ug/L 09/27/16 12:15 1,1,2-Trichloroethane <1.000 50.00 56.79 ug/L 09/27/16 12:15 114 85-124 Trichloroethene <1.000 50.00 56.04 112 87-127 ug/L 09/27/16 12:15 ug/L <5.000 50.00 57.82 77-147 09/27/16 12:15 Trichlorofluoromethane 116 1,1,2-Trichloro-1,2,2-Trifluoroethane 68-135 <1.000 50.00 61.19 122 ug/L 09/27/16 12:15

114

98

Vinyl Chloride

m,p-Xylenes

<1.000

< 2.000

50.00

100

57.14

97.57

ug/L

ug/L

09/27/16 12:15

09/27/16 12:15

74-138

84-124

QC Summary 16092211

Icor Ltd. Robinson Terminal North

Analytical Method: SW-846 8260 B Prep Method: SW5030B Seq Number: 136140 Matrix: Water Date Prep: 09/27/16

LCS Sample Id: 62733-1-BKS MB Sample Id: 62733-1-BLK

MB cample la. 0210	O I DLIK									
Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec		Limits		Units	Analysis Date	Flag
o-Xylene	<1.000	50.00	50.82	102	2	79-126		ug/L	09/27/16 12:15	
Surrogate	MB %Rec	MB Flag		.CS esult	LCS Flag		Limits	Units	Analysis Date	
4-Bromofluorobenzene	102		1	100			86-111	%	09/27/16 12:15	
Dibromofluoromethane	99		9	99			91-119	%	09/27/16 12:15	
Toluene-D8	105		1	103			90-117	%	09/27/16 12:15	

F = RPD exceeded the laboratory control limits

X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits

L = Recovery of BS,BSD or both below the laboratory control limits



SAMPLE CHAIN OF CUSTODY/AGREEMENT FORM

www.phaseonline.com

PHASE SEPARATION SCIENCE, INC.

email: info@phaseonline.com

*CLIEN	14CLIENT: 1002, LTD,	*OFFIC	*OFFICE LOC.			PSS Worl	PSS Work Order #:		122609	122	1		PAGE	اً ا	OF
*PROJI	*PROJECT MGR: M. KRUE PEK		1*PHONE NO (703 60	3608	8-5469	Matrix Codes: SW=Surface Wir I	es: e Wir DW=	Drinking Wt	r GW=Groun	d Wir ww	=Waste Wh	0=0il S=	oil L=Liquid	SOL=Solid	DW=Drinking Wtr GW=Ground Wtr WW=Waste Wtr O=Oil S=Soil L=Liquid SOL=Soild A=Air W1=Wipe
EMAIL:	EMAIL: LAND (TRO) OHOL, FOX NO.	C. FAX NC	- 2				SAMPLE	Preservatives Used		\dashv		+	1		_
*PROJI	*PROJECT NAME: RORINGON TERMINAL MONTH	Terum	1 NOA	AT IECT NO.:		0 Z F		Method / Required	/	\	/	_	'ox	_	_
SITELC	SITE LOCATION: 500/501 N. JULON STEO. NO.	JANOA.	15780.h	O.			COMP	3/	\	10	7	2	1	\	
SAMPLER(S):	ER(S): M. SRUZZES 1	133	DW CERT NO.:	10.:		ZШ	GBAB	1	00	300	3	10/0	/	/	
LAB NO	*SAMPLE IDENTIFICATION		*DATE	*TIME	MATRIX (See Codes)			2	1	2 3	7	7	_	\	REMARKS
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(3)					ı		9	-			-	-1	1	-	١
ersion 1.	Relinquished By: (1)	Hat IC	Time . 0800	Received By:	× 5					AT (One TAT 3-Day Emergency	(2) 2-Day Other Other		# of Coolers: Custody Seal:	488	
	Relinquished By: (2)	Date 9/22	Time 3/5	Received B	Z	, {	٦٥٥	Data Deliverables		quired:	ОТНЕВ		Ice Present ME Shipping Carrier:	K	TE 18, 10°
Relinqui	Relinquished By: (3)	Date	Time	Received By	*		-	Special Instructions	structions:						
Relinqui	Relinquished By: (4)	Date	Time	Received By:	ä			DW COMPLIANCE?		EDD FORMAT TYPE	MAT TYF	₩	STATE RE	SULTS RI	STATE RESULTS REPORTED TO:
						ı	1			l				۱	

6630 Baltimore National Pike • Houte 40 West • Baltimore, Maryland 21228 • (410) 747-8770 • (800) 932-9047 • Fax (410) 788-8723

The client (Client Name), by signing, or having client's agent sign, this "Sample Chain of Custody/Agreement Form", agrees to pay for the above requested services per the latest version of the Service Brochure or PSS-provided quotation including any and all attorney's or other reasonable fees if collection becomes necessary. * = REQUIRED



Phase Separation Science, Inc.

Sample Receipt Checklist

Work Order # 16092211 Received By Rachel Davis

Client Name Icor Ltd. Date Received 09/22/2016 01:15:00 PM

Project Name Robinson Terminal North Delivered By Trans Time Express

Disposal Date 10/27/2016 Tracking No Not Applicable

Logged In By Rachel Davis

Shipping Container(s)

No. of Coolers

		Ice	Present
Custody Seal(s) Intact?	N/A	Temp (deg C)	7
Seal(s) Signed / Dated?	N/A	Temp Blank Present	No

Custody Seal(s) Intact?

N/A

Temp (deg C)

8

Seal(s) Signed / Dated?

N/A

Temp Blank Present

No

Custody Seal(s) Intact?

N/A

Temp (deg C)

Seal(s) Signed / Dated?

N/A

Temp Blank Present

No

Documentation

COC agrees with sample labels?

Chain of Custody

Sampler Name

Mike Bruzzesi

MD DW Cert. No.

N/A

N/A

Sample Container

Appropriate for Specified Analysis?

Intact?

Custody Seal(s) Intact? Not Applicable

Seal(s) Signed / Dated Not Applicable

Labeled and Labels Legible? Yes

Total No. of Samples Received 4 Total No. of Containers Received 44

Preservation

Total Metals	(pH<2)	Yes
Dissolved Metals, filtered within 15 minutes of collection	(pH<2)	N/A
Orthophosphorus, filtered within 15 minutes of collection		N/A
Cyanides	(pH>12)	N/A
Sulfide	(pH>9)	N/A
TOC, DOC (field filtered), COD, Phenols	(pH<2)	N/A
TOX, TKN, NH3, Total Phos	(pH<2)	N/A
VOC, BTEX (VOA Vials Rcvd Preserved)	(pH<2)	Yes
Do VOA vials have zero headspace?		Yes
624 VOC (Rcvd at least one unpreserved VOA vial)		N/A
524 VOC (Rcvd with trip blanks)	(pH<2)	N/A



Phase Separation Science, Inc

Sample Receipt Checklist

Work Order # 16092211 Received By Rachel Davis

Client Name Icor Ltd. Date Received 09/22/2016 01:15:00 PM

Project Name Robinson Terminal North Delivered By Trans Time Express

Disposal Date 10/27/2016 Tracking No Not Applicable

Logged In By Rachel Davis

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Samples Inspected/Checklist Completed By:	Rachel Davis	Date: 09/22/2016	
PM Review and Approval:	Simon Crisp	Date: 09/23/2016	